

DRAFT

UNIT-SPECIFIC TECHNICAL MEMORANDUM: TIE-DOWN USTs & AST PRATT & WHITNEY, EAST HARTFORD, CT

AREA: South Klondike

SUB-AREA: Tie-Down

RCRA REG. NO. JS CENTER
FACILITY PRATT & WHITNEY
MAN ST
I.D. NO. CTD 990072081
FILE LOC. R-9
OTHER RDMS # 1136

ENVIRONMENTAL UNIT: Underground Storage Tanks and Aboveground Storage Tank

Location: In the South Klondike Area, this unit is located east of Perimeter Road and southwest of the B-24 Test Stand (Drawing 1).

Description: Two 3,000-gallon underground storage tanks (USTs) were reportedly located in the western portion of the Tie-Down Area. The Tie-Down Area was used to secure aircraft close to the runways. The Tie-Down Area was also used for general storage of various equipment and parts. The former contents of these tanks are not known, but are assumed to be jet fuels. The location of these two tanks is shown on an undated Pratt and Whitney Aircraft drawing, entitled "Tie-Down Area Fuel Piping Layout. A 3,000-gallon aboveground storage tank (AST) was located on concrete saddles in the southern portion of the Tie-Down Area. This tank was reported to contain fuel.

Dates of Operation: The approximate time frame in which the USTs were operated is unknown. Based on a large-scale aerial photograph, the AST was in operation as of 1965. Its use was suspended between June 2, 1983 and August 18, 1984. The date the operation of the AST ended was based on two aerial photographs, acquired from the Pratt & Whitney Photographic Services Department.

Processes: It is believed that these tanks were used to store and distribute fuels to engines being tested in the B-24 Test Stand. In addition, these tanks may have been used to supply fuels to aircraft in the area.

Aerial Photographs: Large-scale aerial photographs for 1965, 1970, and 1975 were obtained from Keystone Aerial Surveys Inc. Three smaller aerial photographs were obtained from the Pratt and Whitney (P&W) Photographic Services Department. All of the large-scale photographs show the AST, but no evidence of the USTs exist. The AST is plainly observed in the 1970 and 1975 photographs. The 1965 photograph is blurry and the image of the AST is not clearly defined. The three smaller aerial photographs were taken on May 24, 1977, June 2, 1983 and August 18, 1984. The 1977 and 1983 photographs show the AST, but no indication of the USTs is discernible. The 1984 photograph does show the structure that supports the AST, but the tank itself is no longer present. Also, the 1984 photograph does not show the USTs.

Specific Contaminants of Concern: The specific contaminants of concern are fuels. However, in order to be as comprehensive as possible in the investigation that was conducted, the following constituent group were analyzed for: volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, nickel, and zinc), and total petroleum hydrocarbons (TPH).

INVESTIGATION AND REMEDIATION ACTIVITIES:

Due to the potential for releases associated with the Tie-Down USTs and AST, various historical investigations have been conducted within this area generating analytical data in the general vicinity of the unit. In order to be as comprehensive as possible, presentation of this data is included below in chronological order. Historical investigations for the Tie-Down Area were conducted in November 1991, June 1992, and May 1993. Prior to 1991, no investigation of this unit had reportedly been performed.

Furthermore, subsurface investigations to determine the degree and extent of potential soil contamination, specifically associated with the USTs and AST, were performed in September 1996 and January 1997. Soil borings and soil samples that will be remediated as part of the Soils Removal Project in this area have been reclassified to soil boring proposed remediated (SPB) or soil sample proposed remediated (SPS) classes and they appear as such in subsequent data tables. The investigations and the remediation are discussed below in chronological order.

On two different dates, November 11, 1991 and June 9, 1992 a surface water sample was taken from the same location, SK-SW-01, from the East Unnamed Tributary to Pewterpot Brook on the east side of the Tie-Down Area. For a more detailed account of the surface water and sediment sampling conducted in this area refer to *Technical Memorandum (TM) 6, Surface Water and Sediment Sampling*.

One monitoring well, SK-MW-16, was installed in the Tie-Down Area. This well was located on the west side of the surface water drainage ditch and Perimeter Road, in the general down gradient direction of the USTs. This well was installed by Metcalf and Eddy, Inc. (M&E) in May 1993 as part of groundwater investigations of suspected contamination from potential releases associated with the Fire Training Area A and the Tie-Down Area. The well location is shown on Drawing 2. During the installation of this monitoring well, soil samples were collected for laboratory analysis and are discussed in the appropriate portions of the chronological presentation of the investigations.

Supplemental groundwater investigations, including monitoring well SK-MW-16, have also been conducted in the vicinity of this unit since the installation of the monitoring well. In order to be as comprehensive as possible, presentation of this incidental data is discussed as part of this Unit-Specific Technical Memorandum.

A summary of the groundwater samples collected and analyses performed is included in Table 1. Concentrations of constituents detected in groundwater samples collected from this monitoring well are presented in Table 4. A complete summary of groundwater sample analytical results with detection limits is presented in Table 5. Detected concentrations at each groundwater sampling location are shown on Drawing 2. Only one VOC, methyl-tert-butyl ether (MTBE), was detected in groundwater from monitoring well SK-MW-16. TPH was also detected in the groundwater. However, neither the concentration of MTBE or TPH exceeded the Connecticut Remediation Standard Regulation (RSR). No SVOCs or metals were detected in the groundwater. For a more detailed account of the groundwater sampling conducted in this area refer to *TM 3, Groundwater Sampling and Quality*.

May 1993 Investigation (M&E; Fuss & O'Neill, Inc.):

Description: A geophysical investigation, consisting of ground penetrating radar (GPR) was conducted, during May 24 through May 26, 1993, in the location of the suspected underground storage tanks by Fuss & O'Neill, Inc. (F&O), as a subcontractor to M&E. A variety of targets, described as "a scattering of miscellaneous objects, some similar to pipes" were interpreted from the GPR survey results. Additional information on the geophysical investigation is included in *TM 8, Geophysical Investigations*.

In May 1993, monitoring well SK-MW-16 was installed west of the Tie-Down Area by M&E personnel. The well was screened across the water table with a screened interval of 4.5 to 9.5 feet. Clay was encountered at 9.5 feet. During the advancement of the boring for this well, two soil samples were collected and analyzed. The samples were composite samples collected along the length of the boring. One soil sample was submitted for analysis of VOCs and the other was analyzed for polychlorinated biphenyls (PCBs), metals, and TPH. The metals analyses included both mass analysis and the toxicity characteristic leaching procedure (TCLP). A summary of the samples collected and analyses performed is included in Table 1.

On May 20, 1993, two surface soil samples, SK-SS-15 and SK-SS-16, were advanced in the vicinity of the former AST. The sampling locations are shown on Drawing 1. Soil samples were collected from the 0 to 1 foot interval. These samples were analyzed for VOCs, SVOCs, metals, and PCBs. The metals analysis included both mass and TCLP analysis.

Investigation Results: Boring logs are not available for monitoring well SK-MW-16. However, concentrations of constituents detected in soil samples collected for this unit are presented in Table 2. A complete summary of soil analytical results with detection limits is presented in Table 3. Detected concentrations at each soil sampling location are shown on Drawing 1. VOCs were not detected in the sample that was analyzed for this constituent. PCBs were not detected in the other soil sample analyzed. One or more of the metals analyzed were detected in the soil sample submitted for analysis. Mass metals detected include barium, beryllium, chromium, lead, nickel, and zinc. Of those metals, only chromium was detected by the TCLP extraction.

One or more of the metals analyzed were detected in each of the surface soil samples submitted for analysis. These metals include arsenic, barium, beryllium, cadmium, chromium, lead, nickel, silver, and zinc. Cadmium was also detected in the TCLP extraction for soil samples SK-SS-15 and SK-SS-16.

Data Evaluation and Conclusions: The data were compared to the default numeric criteria included in the RSR and the site-wide background soil concentrations for various metals. For a more detailed discussion of background concentrations of metals in soil refer to *TM 4, Background Soil Sampling and Analysis*. Criteria are established in the RSR based on exposure pathways for various environmental media, including soil and groundwater. The evaluation of the soils data is based on a comparison to the default numeric residential direct exposure criteria (RDEC), the industrial/commercial direct exposure criteria (IDEC), and the GB pollutant mobility criteria (GBPMC) included in the RSR. The evaluation of the groundwater data is based on a comparison to the residential volatilization criteria (RVC), the industrial/commercial

volatilization criteria (IVC), and the surface water protection criteria (SWPC) included in the RSR.

No exceedances of the RSR were noted in any of the soils data evaluated. Considering the data that was evaluated, evidence exists to indicate the presence of a release in the vicinity of this unit. Since only two soil samples and one groundwater location were evaluated, additional investigations in the vicinity of the unit were warranted.

September 1996 Investigation (Loureiro Engineering Associates, Inc.):

Description: A geophysical investigation, consisting of magnetometry surveys was conducted, on September 6, 1996, in the location of the suspected USTs by Kick Geoexploration (Kick). One magnetic anomaly was interpreted to be consistent with that caused by the presence of a buried tank-like structure. Additional information on the geophysical investigation is included in *TM 8, Geophysical Investigations*.

On September 20, 23, and 24, 1996, seven soil borings, SK-SB-86 through SK-SB-92, were advanced by Loureiro Engineering Associates, Inc. (LEA) personnel in the vicinity of the former USTs and AST. The sampling locations are shown in Drawing 1. Soil samples were collected from each of the borings in continuous 2-foot intervals to 14 feet, with a one foot interval from 14 to 15 feet. The depth of 15 feet was selected to ensure that sufficient data were collected for comparisons against the direct exposure criteria in the RSR.

A total of 57 soil samples were submitted to the LEA Analytical Laboratory and screened for the presence of target VOCs, including benzene (BZ), ethylbenzene (EBZ), tetrachloroethylene (PCE), toluene (TL), 1,1,1-trichloroethane (TCA), trichloroethylene (TCE), and xylene (XYL). Based on visual, olfactory, or instrument evidence, and with consideration of the potential release mechanism, two samples from each of the seven borings were submitted to Averill Environmental Laboratory, Inc. (AEL) and analyzed for the presence of VOCs, SVOCs, metals, and TPH. A summary of the samples collected and analyses performed is included in Table 1.

Investigation Results: Based on the boring logs, groundwater was encountered between 6 feet and 8 feet in the seven soil borings performed. Varved clay was encountered between 11 feet and 12 feet. No visual or olfactory evidence of petroleum hydrocarbons was noted on the boring logs.

Concentrations of constituents detected in soil samples collected for this unit are presented in Table 2. A complete summary of soil analytical results with detection limits is presented in Table 3. Detected concentrations at each soil sampling location are shown on Drawing 1. Several VOCs were detected in the soil samples submitted to the LEA Analytical Laboratory and to AEL. These VOCs included XYL, EBZ, PCE, TCE, and TL. VOCs were detected in the soil samples collected from borings SK-SB-87, SK-SB-88, and SK-SB-90 through SK-SB-92. The highest VOC concentration was XYL at a concentration of 3,200 J11 micrograms per kilograms ($\mu\text{g/kg}$) in boring SK-SB-87 at a depth of 6 to 8 feet. The "J11" qualifier indicates that the value is estimated because the concentration is above the calibration range. No other detectable concentrations of VOCs were noted for the remaining 13 soil samples submitted for fixed

laboratory analysis.

One SVOC was detected in one of the fourteen soil samples submitted to AEL from boring SK-SB-87. Naphthalene (NAP) was detected at a concentration of 17,000 µg/kg in boring SK-SB-87 at a depth of 6 to 8 feet. No other detectable concentrations of SVOCs were noted in the remaining soil samples submitted for fixed laboratory analysis.

One or more of the metals analyzed were detected in each of the fourteen soil samples submitted for analysis. These metals include arsenic, barium, cadmium, chromium, nickel, and zinc.

TPH was detected in three of the fourteen soil samples submitted to AEL for analysis. TPH was detected in borings SK-SB-86, SK-SB-87, and SK-SB-88. The highest concentration of TPH detected was at a concentration of 1,610 milligrams per kilogram (mg/kg) in boring SK-SB-87 at a depth of 6 to 8 feet.

Data Evaluation and Conclusions: The data were compared against the default numeric criteria included in the RSR and the site-wide background soil concentrations for various metals. The concentrations of metals detected in the soil samples are typical of site-wide background concentrations, except for barium, beryllium, chromium, lead, and nickel. These metals were detected at elevated concentrations above background levels, but still below the RDEC, the IDEC, or the GBPMC. However, arsenic was detected at concentrations above the RDEC and the IDEC in borings SK-SB-86 (10.5 mg/kg) and SK-SB-90 (11.8 mg/kg) at a depth of 12 to 14 feet as shown in Table 6 and Table 7, respectively. These samples were collected from the Glaciolacustrine Sediment (re. clay) layer and are very close to the concentration statistically attributed to site-wide background concentrations for arsenic. For a more detailed discussion of background concentrations of metals refer to *TM 4, Background Soil Sampling and Analysis*.

For the VOCs and SVOCs detected in soil, no exceedances of the default numeric RDEC, IDEC or GBPMC were noted. TPH was detected above the RDEC in boring SK-SB-87 at a depth of 6 to 8 feet as shown in Table 6.

Based on the results of the laboratory analyses of soil and groundwater samples collected, further action was warranted for this unit. Additional soil borings and screenpoint groundwater samples were collected in order to define the degree and extent of contamination.

January 1997 Investigation (LEA):

Description: On January 16 and 20 through 22, 1997 ten soil borings, SK-SB-107 through SK-SB-116, were advanced in the vicinity of the former USTs and AST. The sampling locations are shown in Drawing 1. Soil samples were collected from each of the borings in continuous 2-foot intervals to 12 feet. The depth of 12 feet was selected to ensure that sufficient data were collected to delineate the extent of the contamination, detected in the previous soil samples.

A total of 62 soil samples were submitted to the LEA Analytical Laboratory and screened for the presence of target VOCs. Based on visual, olfactory, or instrument evidence, and with consideration of the potential release mechanism, soil samples were submitted to AEL for

analysis of VOCs, SVOCs, and TPH, depending on which constituents had been detected in the area during the previous investigations.

In addition, groundwater samples were collected by LEA on January 22, 1997, from borings SK-SB-107, SK-SB-108, SK-SB-110, SK-SB-114, and SK-SB-115, using Geoprobe® screenpoint groundwater sampling techniques. These locations were installed upgradient and downgradient of the previous soil detections. The groundwater samples were collected from a depth of 10 to 12 feet below the ground surface. These groundwater samples were submitted to AEL for analysis for VOCs, SVOCs, and TPH. A summary of the samples collected and analyses performed is included in Table 1.

Investigation Results: Based on the boring logs, groundwater was encountered between 5.5 feet and 7.5 feet in the borings. Varved clay was encountered between 9.5 feet and 12 feet. A petroleum hydrocarbon odor was noted in borings SK-SB-110, SK-SB-111, SK-SB-113, SK-SB-114, and SK-SB-116 at a depth between 7.5 to 9 feet. A strong odor with visible evidence of petroleum hydrocarbons was also noted in boring SK-SB-115 at 7.5 to 8.5 feet. The samples with visual or olfactory evidence of petroleum hydrocarbons were all collected below the water table in the vicinity of the former AST.

Concentrations of constituents detected in soil samples collected for this unit are presented in Table 2. A complete summary of soil analytical results with detection limits is presented in Table 3. Detected concentrations at each soil sampling location are shown on Drawing 1.

Several VOCs were detected in the soil samples submitted to the LEA Analytical Laboratory and to AEL. These VOCs included BZ, EBZ, TCE, and XYL. VOCs were detected in the soil samples collected from borings SK-SB-107, SK-SB-110, and SK-SB-115. The highest VOC concentration detected in the soil samples was XYL at a concentration of 6,500 µg/kg in boring SK-SB-110 at a depth of 6 to 8 feet. No SVOCs were detected in the five soil samples submitted to AEL for analysis.

TPH was detected in soil samples submitted to AEL from borings SK-SB-110 and SK-SB-111. The highest concentration of TPH was detected at 9,370 mg/kg in boring SK-SB-110 at a depth of 6 to 8 feet.

Concentrations of constituents detected in the groundwater samples are presented in Table 4. A complete summary of groundwater analytical results with detection limits is presented in Table 5. Detected concentrations at each groundwater sampling location are shown on Drawing 2. No VOCs or SVOCs were detected in the groundwater screenpoint samples that were analyzed. However, TPH was detected in one of the five groundwater samples submitted for analysis. TPH was detected at a concentration of 10.2 micrograms per liter (mg/l) in the groundwater sample from screenpoint sample SK-SB-115.

Data Evaluation and Conclusions: The data were compared against the default numeric criteria included in the RSR and the site-wide background soil concentrations for various metals.

BZ was detected at a concentration above the GBPMC for boring SK-SB-115 as shown in Table

8. This soil does not require remediation, since this exceedance was below the water table and the GBPMC applies to constituents detected above the seasonal high water table.

The concentration of TPH detected in boring SK-SB-110 was above the RDEC, the IDEC, and the GBPMC as shown in Table 6, 7, and 8, respectively. For the single TPH detect in the groundwater, no exceedances of the RSR were noted.

Summarizing all of the investigations completed to date, TPH was detected above the RDEC in boring SK-SB-87 at a depth of 6 to 8 feet as shown in Table 6. The concentration of TPH detected in boring SK-SB-110 was above the RDEC, the IDEC, and the GBPMC as shown in Table 6, 7, and 8, respectively

In consideration of all above investigation , the remediation of the area near the soil exceedances is scheduled to be part of the Klondike Soil Removal Project. For a more detailed discussion of the Klondike Soil Removal Project refer to *TM 14, Soil Removals*. Drawing 1 shows the approximate limits of the proposed excavations.

Once these quantities of soil have been removed, confirmational samples of the excavation sidewalls will be collected to confirm removal of all contaminated material. The confirmational samples will be analyzed for VOCs, metals, and TPH to confirm that the constituents detected have been removed. For the remaining soil, if deemed necessary, an ELUR for industrial/commercial use and inaccessible soil will be recorded to satisfy the RSR criteria for site use and accessibility. Subsequently, once the soil exceedances have been removed, this unit will have been adequately remediated and no further investigation or remediation will be warranted.

REFERENCES

Fuss & O'Neill, Inc., 1994, *Soil Sampling Background Areas – North Klondike*, prepared for Pratt & Whitney.

Keystone Aerial Surveys, Inc. 1965, *Aerial Photo of Rentschler Airport and Surrounding Areas*, East Hartford, CT.

Keystone Aerial Surveys, Inc. 1970, *Aerial Photo of Rentschler Airport and Surrounding Areas*, East Hartford, CT.

Keystone Aerial Surveys, Inc. 1975, *Aerial Photo of Rentschler Airport and Surrounding Areas*, East Hartford, CT.

Metcalf & Eddy, Inc. July 1993, *Draft Report - Klondike Area Site Investigation, UTC / Pratt & Whitney Facility, East Hartford, CT*, prepared for Pratt & Whitney.

Pratt and Whitney Aircraft, *Tie-Down Area Fuel Piping Layout*, Pratt & Whitney, East Hartford, CT.

P&W Photographic Services Department, 1977, *Aerial Photograph, Negative Number 77-445-0054-AH*, Pratt & Whitney, East Hartford, CT.

P&W Photographic Services Department, 1983, *Aerial Photograph, Negative Number 83C1793-*

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042, Pratt & Whitney, East Hartford, CT.

P&W Photographic Services Department, 1984, *Aerial Photograph, Negative Number 84C7659*
085, Pratt & Whitney, East Hartford, CT.

Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
P&W East Hartford: Tie-Down USTs & AST

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Sample Information						Analysis Information								
Location ID	Sample ID	Sample Date	From (ft)	To (ft)	Class	Portable GC	Volatile Organics	Semivolatile Organics	Herbicides	Pesticides	PCBs	Metals	Extraction	Miscellaneous
SK-MW-16	02165051393	5/13/93			SB		x							
SK-MW-16	02169051393	5/13/93			SB						x	X	x	X
SK-MW-16	02161052693	5/26/93	4.50	9.50	GW		X	x				x		
SK-MW-16	1018199	9/12/96	4.5	9.5	GW		x					x		X
SK-MW-16	1634478	6/ 4/97	4.5	9.5	GW		x	x						x
SK-MW-16	1647340	11/20/97	4.5	9.5	GW		x	x						x
SK-SB-107	1024987	1/16/97	0	2	SB	x								
SK-SB-107	1024988	1/16/97	2	4	SB	x								
SK-SB-107	1024989	1/16/97	4	6	SB	X	x							
SK-SB-107	1024990	1/16/97	6	8	SB	X								
SK-SB-107	1024991	1/16/97	8	10	SB	x	x							
SK-SB-107	1024992	1/16/97	10	12	SB	x								
SK-SB-107	1024980	1/22/97	10.0	12.0	GW		x	x						x
SK-SB-108	1024993	1/16/97	0	2	SB	x								
SK-SB-108	1024994	1/16/97	2	4	SB	x								
SK-SB-108	1024995	1/16/97	4	6	SB	x								
SK-SB-108	1024996	1/16/97	6	8	SB	x								
SK-SB-108	1024997	1/16/97	8	10	SB	x	x							
SK-SB-108	1024998	1/16/97	8	10	SB	x	x							
SK-SB-108	1024999	1/16/97	10	12	SB	x								
SK-SB-108	1024981	1/22/97	10.0	12.0	GW		x	x						x
SK-SB-109	1025000	1/16/97	0	2	SB	x								
SK-SB-109	1025001	1/16/97	2	4	SB	x								
SK-SB-109	1025002	1/16/97	4	6	SB	x								
SK-SB-109	1025003	1/16/97	6	8	SB	x								
SK-SB-109	1025004	1/16/97	8	10	SB	x	x							
SK-SB-109	1025005	1/16/97	10	12	SB	x								
SK-SB-110	1025010	1/20/97	0	2	SB	x								
SK-SB-110	1025011	1/20/97	2	4	SB	x								
SK-SB-110	1025012	1/20/97	4	6	SB	x	x							x
SK-SB-110	1025013	1/20/97	6	8	SB	x	X							X

Notes: 1. Legend: X - Analysed; at least one analyte over the detection limit; x - Analysed, no analytes in group over the detection limit

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Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
P&W East Hartford: Tie-Down USTs & AST

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Sample Information						Analysis Information								
Location ID	Sample ID	Sample Date	From (ft)	To (ft)	Class	Portable GC	Volatile Organics	Semivolatile Organics	Herbicides	Pesticides	PCBs	Metals	Extraction	Miscellaneous
SK-SB-115	1025047	1/21/97	6	8	SB	X								
SK-SB-115	1025048	1/21/97	8	10	SB	X								
SK-SB-115	1025049	1/21/97	10	12	SB	x								
SK-SB-115	1024983	1/22/97	10.0	12.0	GW		x	x						X
SK-SB-116	1025050	1/21/97	0	2	SB	x								
SK-SB-116	1025051	1/21/97	2	4	SB	x								
SK-SB-116	1025052	1/21/97	4	6	SB	x								
SK-SB-116	1025053	1/21/97	6	8	SB	x								
SK-SB-116	1025054	1/21/97	8	10	SB	x								
SK-SB-116	1025055	1/21/97	10	12	SB	x								
SK-SB-86	1018465	9/23/96	0	2	SB	x								
SK-SB-86	1018466	9/23/96	2	4	SB	x								
SK-SB-86	1018467	9/23/96	4	6	SB	x								
SK-SB-86	1018468	9/23/96	6	8	SB		x	x				X		X
SK-SB-86	1018469	9/23/96	8	10	SB	x								
SK-SB-86	1018470	9/23/96	10	12	SB	x								
SK-SB-86	1018471	9/23/96	12	14	SB	x	x	x				X		x
SK-SB-86	1018472	9/23/96	14	15	SB	x								
SK-SB-87	1018457	9/23/96	0	2	SPB	x								
SK-SB-87	1018458	9/23/96	2	4	SPB	x								
SK-SB-87	1018459	9/23/96	4	6	SPB	x								
SK-SB-87	1018460	9/23/96	6	8	SPB		X	X				X		X
SK-SB-87	1018461	9/23/96	8	10	SB	X								
SK-SB-87	1018462	9/23/96	10	12	SB	x								
SK-SB-87	1018463	9/23/96	12	14	SB	x	x	x				X		x
SK-SB-87	1018464	9/23/96	14	15	SB	x								
SK-SB-88	1018448	9/23/96	0	2	SB	x								
SK-SB-88	1018449	9/23/96	2	4	SB	x	x	x				X		X
SK-SB-88	1018450	9/23/96	4	6	SB	x								
SK-SB-88	1018451	9/23/96	4	6	SB	x								
SK-SB-88	1018452	9/23/96	6	8	SB	X								
SK-SB-88	1018453	9/23/96	8	10	SB	X	x	x				X		x

Notes: 1. Legend: X - Analysed; at least one analyte over the detection limit; x - Analysed, no analytes in group over the detection limit

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Notes: 1. Legend: X - Analysed; at least one analyte over the detection limit; x - Analysed, no analytes in group over the detection limit
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Table 2
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION (DETECTS) - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-SB-107	SK-SB-107	SK-SB-110	SK-SB-111	SK-SB-115	SK-SB-115
	Sample ID	02169051393	1024989	1024990	1025013	1025020	1025047	1025048
	Sample Date	05/13/1993	01/16/1997	01/16/1997	01/20/1997	01/20/1997	01/21/1997	01/21/1997
	Sample Time		11:42	11:47	11:15	13:43	13:30	13:35
	Sample Depth		4' - 6'	6' - 8'	6' - 8'	6' - 8'	6' - 8'	8' - 10'
	Laboratory	ENS	LEA	LEA	AEL	AEL	LEA	LEA
	Lab. Number	0286960002SA	97-0689-1247	97-0690-1249	AEL97001075	AEL97001078	97-0834-141	97-0835-142
Constituent	Units							
Date Metals Analyzed	-	05/26/1993						
Date Organics Analyzed	-		01/20/1997	01/20/1997	01/29/1997		01/22/1997	01/22/1997
Date Physical Analyzed	-	05/18/1993			01/29/1997	01/29/1997		
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg	13.8						
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg	5.6						
Lead	mg/kg	2.5						
Nickel	mg/kg	6.4						
Silver	mg/kg							
Zinc	mg/kg	12.0						
Corrosivity	SU	6.9						
Total Petroleum Hydrocarbons	mg/kg				9370	41.7		
Naphthalene	µg/kg							
Benzene (screening)	µg/kg						581 E nc	707 E
Ethylbenzene	µg/kg				550 J10J11			
Tetrachloroethylene (screening)	µg/kg							
Toluene (screening)	µg/kg							
Trichloroethylene (screening)	µg/kg		5 J	5 J nc				
Xylenes (Total)	µg/kg				6500			

Notes: 1. Only Detects Shown
2. Printed on 11/16/98

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Table 2
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION (DETECTS) - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-86	SK-SB-86	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-88	SK-SB-88
	Sample ID	1018468	1018471	1018460	1018461	1018463	1018449	1018452
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:50	15:20	13:30	13:40	14:00	10:35	11:15
	Sample Depth	6' - 8'	12' - 14'	6' - 8'	8' - 10'	12' - 14'	2' - 4'	6' - 8'
	Laboratory	AEL	AEL	AEL	LEA	AEL	AEL	LEA
	Lab. Number	AEL96010797	AEL96010798	AEL96010795	96-4730-095	AEL96010796	AEL96010793	96-4719-084
Constituent	Units							
Date Metals Analyzed	-	10/02/1996	10/02/1996	10/02/1996		10/02/1996	10/02/1996	
Date Organics Analyzed	-			10/04/1996	09/24/1996			09/24/1996
Date Physical Analyzed	-	10/07/1996		10/07/1996			10/07/1996	
Date Semi-volatile Organics Analyzed	-			10/18/1996				
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg		10.5	1.29		7.57		
Barium	mg/kg	11.5	292	15.3		246	7.88	
Beryllium	mg/kg							
Cadmium	mg/kg		7.89			5.6		
Cadmium (TCLP)	mg/l							
Chromium	mg/kg		50.9	6.51		46.6	5.83	
Chromium (Total)	mg/kg							
Lead	mg/kg							
Nickel	mg/kg		42.1			39.6		
Silver	mg/kg							
Zinc	mg/kg	21.6	128	45.2		160	12.1	
Corrosivity	SU							
Total Petroleum Hydrocarbons	mg/kg	80.4		1610			48.4	
Naphthalene	µg/kg			17000				
Benzene (screening)	µg/kg							
Ethylbenzene	µg/kg			560 J11				
Tetrachloroethylene (screening)	µg/kg							4 J
Toluene (screening)	µg/kg							
Trichloroethylene (screening)	µg/kg				665			
Xylenes (Total)	µg/kg			3200 J11				

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Table 2
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION (DETECTS) - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-88	SK-SB-88	SK-SB-89	SK-SB-89	SK-SB-90	SK-SB-90	SK-SB-90
	Sample ID	1018453	1018453	1018423	1018425	1018475	1018477	1018478
	Sample Date	09/23/1996	09/23/1996	09/20/1996	09/20/1996	09/24/1996	09/24/1996	09/24/1996
	Sample Time	11:25	11:25	12:20	12:40	09:45	10:05	10:15
	Sample Depth	8' - 10'	8' - 10'	2' - 4'	6' - 8'	0' - 2'	4' - 6'	6' - 8'
	Laboratory	AEL	LEA	AEL	AEL	AEL	LEA	LEA
	Lab. Number	AEL96010794	96-4721-086	AEL96010787	AEL96010788	AEL96010865	96-4773-035	96-4774-036
Constituent	Units							
Date Metals Analyzed	-	10/02/1996		10/02/1996	10/02/1996	10/02/1996		
Date Organics Analyzed	-		09/24/1996				09/25/1996	09/25/1996
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg					4.61		
Barium	mg/kg	16.9		9.95	9.78	54		
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg	6.7		6.78	6.56	9.68		
Chromium (Total)	mg/kg							
Lead	mg/kg							
Nickel	mg/kg							
Silver	mg/kg							
Zinc	mg/kg	25.1		10.4	11.9	41.9		
Corrosivity	SU							
Total Petroleum Hydrocarbons	mg/kg							
Naphthalene	µg/kg							
Benzene (screening)	µg/kg							
Ethylbenzene	µg/kg							
Tetrachloroethylene (screening)	µg/kg		6 J nc				4 J	3 J
Toluene (screening)	µg/kg							
Trichloroethylene (screening)	µg/kg							
Xylenes (Total)	µg/kg							

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Table 2
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION (DETECTS) - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-91
	Sample ID	1018479	1018480	1018481	1018482	1018482	1018483	1018430
	Sample Date	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/20/1996
	Sample Time	10:25	10:35	10:45	15:00	15:00	11:05	13:25
	Sample Depth	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'
	Laboratory	LEA	LEA	LEA	AEL	LEA	LEA	AEL
	Lab. Number	96-4775-037	96-4776-038	96-4777-039	AEL96010866	96-4778-040	96-4779-041	AEL96010789
Constituent	Units							
Date Metals Analyzed	-				10/02/1996			10/02/1996
Date Organics Analyzed	-	09/25/1996	09/25/1996	09/25/1996		09/25/1996	09/25/1996	
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg				11.8			2.54
Barium	mg/kg				314			22.9
Beryllium	mg/kg							
Cadmium	mg/kg				7.7			
Cadmium (TCLP)	mg/l							
Chromium	mg/kg				54.1			11.4
Chromium (Total)	mg/kg							
Lead	mg/kg							
Nickel	mg/kg				46.2			
Silver	mg/kg							
Zinc	mg/kg				127			16.4
Corrosivity	SU							
Total Petroleum Hydrocarbons	mg/kg							
Naphthalene	µg/kg							
Benzene (screening)	µg/kg							
Ethylbenzene	µg/kg							
Tetrachloroethylene (screening)	µg/kg	3 J	4 J	3 J		3 J	3 J	
Toluene (screening)	µg/kg					8 J	5 J	
Trichloroethylene (screening)	µg/kg							
Xylenes (Total)	µg/kg							

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Table 2
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION (DETECTS) - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-91	SK-SB-91	SK-SB-92	SK-SB-92	SK-SB-92	SK-SS-15	SK-SS-15
	Sample ID	1018430	1018433	1018439	1018443	1018443	02155052093	02155209393
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	05/20/1993	05/20/1993
	Sample Time	13:25	13:55	15:00	15:40	15:40		
	Sample Depth	0' - 2'	6' - 8'	2' - 4'	10' - 12'	10' - 12'		
	Laboratory	LEA	AEL	AEL	AEL	LEA	ENS	ENS
	Lab. Number	96-4691-057	AEL96010790	AEL96010791	AEL96010792	96-4703-070	0287990008SA	0290570017SA
Constituent	Units							
Date Metals Analyzed	-		10/02/1996	10/02/1996	10/02/1996		06/07/1993	
Date Organics Analyzed	-	09/23/1996				09/23/1996		
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							07/01/1993
Arsenic	mg/kg						4.3	
Barium	mg/kg		16.9	11	36.7		47.3	
Beryllium	mg/kg						0.39	
Cadmium	mg/kg						2.0	
Cadmium (TCLP)	mg/l							0.013
Chromium	mg/kg		6.97	6.94	8.37			
Chromium (Total)	mg/kg						23.7	
Lead	mg/kg						25.7	
Nickel	mg/kg						5.9	
Silver	mg/kg						1.2	
Zinc	mg/kg		12.5	11.4	19.5		407	
Corrosivity	SU							
Total Petroleum Hydrocarbons	mg/kg							
Naphthalene	µg/kg							
Benzene (screening)	µg/kg							
Ethylbenzene	µg/kg							
Tetrachloroethylene (screening)	µg/kg					5 J		
Toluene (screening)	µg/kg	20						
Trichloroethylene (screening)	µg/kg							
Xylenes (Total)	µg/kg							

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Table 2
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION (DETECTS) - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SS-16	SK-SS-16					
	Sample ID	02165052093	21655209393					
	Sample Date	05/20/1993	05/20/1993					
	Sample Time							
	Sample Depth							
	Laboratory	ENS	ENS					
	Lab. Number	0287990009SA	0290570018SA					
Constituent	Units							
Date Metals Analyzed	-	06/07/1993						
Date Organics Analyzed	-							
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-		07/01/1993					
Arsenic	mg/kg	2.2						
Barium	mg/kg	24.4						
Beryllium	mg/kg							
Cadmium	mg/kg	3.0						
Cadmium (TCLP)	mg/l		0.030					
Chromium	mg/kg							
Chromium (Total)	mg/kg	8.3						
Lead	mg/kg	18.0						
Nickel	mg/kg	5.8						
Silver	mg/kg							
Zinc	mg/kg	32.4						
Corrosivity	SU							
Total Petroleum Hydrocarbons	mg/kg							
Naphthalene	µg/kg							
Benzene (screening)	µg/kg							
Ethylbenzene	µg/kg							
Tetrachloroethylene (screening)	µg/kg							
Toluene (screening)	µg/kg							
Trichloroethylene (screening)	µg/kg							
Xylenes (Total)	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107
	Sample ID	02165051393	02169051393	02169051393	1024987	1024988	1024989	1024989
	Sample Date	05/13/1993	05/13/1993	05/13/1993	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time				11:30	11:35	11:42	11:42
	Sample Depth				0' - 2'	2' - 4'	4' - 6'	4' - 6'
	Laboratory	ENS	ENS	ENS	LEA	LEA	AEL	LEA
	Lab. Number	0286960001SA	0286960002SA	0290040017SA	97-0687-1245	97-0688-1246	AEL97001071	97-0689-1247
Constituent	Units							
Date Metals Analyzed	-		05/26/1993					
Date Organics Analyzed	-	05/24/1993			01/20/1997	01/20/1997	01/28/1997	01/20/1997
Date PCBs Analyzed	-		05/24/1993					
Date Physical Analyzed	-		05/24/1993					
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-			06/17/1993				
Arsenic	mg/kg		<0.59					
Barium	mg/kg		13.8					
Beryllium	mg/kg		<0.23					
Cadmium	mg/kg		<0.59					
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg		5.6					
Chromium (Total) (TCLP)	mg/l			0.010				
Lead	mg/kg		2.5					
Lead (TCLP)	mg/l			<0.050				
Mercury	mg/kg		<0.12					
Nickel	mg/kg		6.4					
Nickel (TCLP)	mg/l			<0.040				
Selenium	mg/kg		<0.59					
Silver	mg/kg		<1.2					
Zinc	mg/kg		12.0					
PCB 1016	µg/kg		<9.7					
PCB 1221	µg/kg		<9.7					
PCB 1232	µg/kg		<9.7					
PCB 1242	µg/kg		<9.7					
PCB 1248	µg/kg		<9.7					
PCB 1254	µg/kg		<9.7					

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107
	Sample ID	02165051393	02169051393	02169051393	1024987	1024988	1024989	1024989
	Sample Date	05/13/1993	05/13/1993	05/13/1993	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time				11:30	11:35	11:42	11:42
	Sample Depth				0' - 2'	2' - 4'	4' - 6'	4' - 6'
	Laboratory	ENS	ENS	ENS	LEA	LEA	AEL	LEA
	Lab. Number	0286960001SA	0286960002SA	0290040017SA	97-0687-1245	97-0688-1246	AEL97001071	97-0689-1247
Constituent	Units							
PCB 1260	µg/kg		<9.7					
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU		6.9					
Cyanide (Reactive)	mg/kg		<0.12					
Sulfide (Reactive)	mg/kg		<1.2					
Total Petroleum Hydrocarbons	mg/kg		<23					
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether, 4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							
Chlorophenol, 2-	µg/kg							
Chlorophenyl Phenyl Ether, 4-	µg/kg							
Chrysene	µg/kg							
Cresol, 2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107
	Sample ID	02165051393	02169051393	02169051393	1024987	1024988	1024989	1024989
	Sample Date	05/13/1993	05/13/1993	05/13/1993	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time				11:30	11:35	11:42	11:42
	Sample Depth				0' - 2'	2' - 4'	4' - 6'	4' - 6'
	Laboratory	ENS	ENS	ENS	LEA	LEA	AEL	LEA
	Lab. Number	0286960001SA	0286960002SA	0290040017SA	97-0687-1245	97-0688-1246	AEL97001071	97-0689-1247
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							
Dichlorophenol,2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol,2,4-	µg/kg							
Dinitro-o-cresol,4,6-	µg/kg							
Dinitrophenol,2,4-	µg/kg							
Dinitrotoluene,2,4-	µg/kg							
Dinitrotoluene,2,6-	µg/kg							
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107
	Sample ID	02165051393	02169051393	02169051393	1024987	1024988	1024989	1024989
	Sample Date	05/13/1993	05/13/1993	05/13/1993	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time				11:30	11:35	11:42	11:42
	Sample Depth				0' - 2'	2' - 4'	4' - 6'	4' - 6'
	Laboratory	ENS	ENS	ENS	LEA	LEA	AEL	LEA
	Lab. Number	0286960001SA	0286960002SA	0290040017SA	97-0687-1245	97-0688-1246	AEL97001071	97-0689-1247
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg						<67	
Acrolein	µg/kg						<33	
Acrylonitrile	µg/kg						<33	
Benzene	µg/kg	<51					<13	
Benzene (screening)	µg/kg				<8	<8		<8
Bromobenzene	µg/kg						<13	
Bromoform	µg/kg	<510					<13	
Carbon Disulfide	µg/kg						<13	
Carbon Tetrachloride	µg/kg	<51					<13	
Chlorobenzene	µg/kg	<200					<13	
Chlorodibromomethane	µg/kg	<100					<13	
Chloroethane	µg/kg	<510					<13	
Chloroethyl Vinyl Ether,2-	µg/kg						<13	
Chloroform	µg/kg	<51					<13	
Chlorotoluene,o-	µg/kg						<13	
Chlorotoluene,p-	µg/kg						<13	
Dibromomethane	µg/kg						<13	

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107
	Sample ID	02165051393	02169051393	02169051393	1024987	1024988	1024989	1024989
	Sample Date	05/13/1993	05/13/1993	05/13/1993	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time				11:30	11:35	11:42	11:42
	Sample Depth				0' - 2'	2' - 4'	4' - 6'	4' - 6'
	Laboratory	ENS	ENS	ENS	LEA	LEA	AEL	LEA
	Lab. Number	0286960001SA	0286960002SA	0290040017SA	97-0687-1245	97-0688-1246	AEL97001071	97-0689-1247
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg	<51					<13	
Dichlorobenzene, 1,3-	µg/kg	<51					<13	
Dichlorobenzene, 1,4-	µg/kg	<51					<13	
Dichlorobromomethane	µg/kg	<100					<13	
Dichlorodifluoromethane	µg/kg						<13	
Dichloroethane, 1,1-	µg/kg	<51					<13	
Dichloroethane, 1,2-	µg/kg	<100					<13	
Dichloroethylene, 1,1-	µg/kg	<51					<13	
Dichloroethylene, 1,2-	µg/kg	<51						
Dichloroethylene, 1,2-cis-	µg/kg						<13	
Dichloroethylene, 1,2-trans-	µg/kg						<13	
Dichloropropane, 1,2-	µg/kg	<100					<13	
Dichloropropylene, 1,3-cis-	µg/kg	<200					<13	
Dichloropropylene, 1,3-trans-	µg/kg	<100					<13	
Ethylbenzene	µg/kg	<51					<13	
Ethylbenzene (screening)	µg/kg				<16	<17		<17
Ethylene Dibromide	µg/kg	<200						
Hexanone, 2-	µg/kg						<33	
Methyl Bromide	µg/kg	<510					<13	
Methyl Chloride	µg/kg	<510					<13	
Methyl Ethyl Ketone	µg/kg						<33	
Methyl-2-pentanone, 4-	µg/kg						<33	
Methyl-tert-butyl Ether	µg/kg						<13	
Methylene Chloride	µg/kg	<510					<13	
Styrene	µg/kg						<13	
Tetrachloroethane, 1,1,1,2-	µg/kg						<13	
Tetrachloroethane, 1,1,2,2-	µg/kg	<100					<13	
Tetrachloroethylene	µg/kg	<51					<13	

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-108	SK-SB-108	SK-SB-108
	Sample ID	1024990	1024991	1024991	1024992	1024993	1024994	1024995
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	11:47	11:50	11:50	11:55	14:30	14:35	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0690-1249	AEL97001072	97-0691-1250	97-0692-1251	97-0693-1252	97-0695-1254	97-0696-1255
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/20/1997	01/28/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-108	SK-SB-108	SK-SB-108
	Sample ID	1024990	1024991	1024991	1024992	1024993	1024994	1024995
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	11:47	11:50	11:50	11:55	14:30	14:35	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEI	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0690-1249	AEI.97001072	97-0691-1250	97-0692-1251	97-0693-1252	97-0695-1254	97-0696-1255
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg							
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether, 4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							
Chlorophenol, 2-	µg/kg							
Chlorophenyl Phenyl Ether, 4-	µg/kg							
Chrysene	µg/kg							
Cresol, 2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-108	SK-SB-108	SK-SB-108
	Sample ID	1024990	1024991	1024991	1024992	1024993	1024994	1024995
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	11:47	11:50	11:50	11:55	14:30	14:35	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEI	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0690-1249	AEI.97001072	97-0691-1250	97-0692-1251	97-0693-1252	97-0695-1254	97-0696-1255
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							
Dichlorophenol,2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol,2,4-	µg/kg							
Dinitro-o-cresol,4,6-	µg/kg							
Dinitrophenol,2,4-	µg/kg							
Dinitrotoluene,2,4-	µg/kg							
Dinitrotoluene,2,6-	µg/kg							
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-108	SK-SB-108	SK-SB-108
	Sample ID	1024990	1024991	1024991	1024992	1024993	1024994	1024995
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	11:47	11:50	11:50	11:55	14:30	14:35	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0690-1249	AEL97001072	97-0691-1250	97-0692-1251	97-0693-1252	97-0695-1254	97-0696-1255
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg		47					
Acrolein	µg/kg		<24					
Acrylonitrile	µg/kg		24					
Benzene	µg/kg		<9.4					
Benzene (screening)	µg/kg	<8 nc		<8 nc	<8	<8	<8	<8
Bromobenzene	µg/kg		<9.4					
Bromoform	µg/kg		<9.4					
Carbon Disulfide	µg/kg		<9.4					
Carbon Tetrachloride	µg/kg		<9.4					
Chlorobenzene	µg/kg		<9.4					
Chlorodibromomethane	µg/kg		<9.4					
Chloroethane	µg/kg		<9.4					
Chloroethyl Vinyl Ether,2-	µg/kg		<9.4					
Chloroform	µg/kg		<9.4					
Chlorotoluene,o-	µg/kg		<9.4					
Chlorotoluene,p-	µg/kg		<9.4					
Dibromomethane	µg/kg		<9.4					

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-107	SK-SB-108	SK-SB-108	SK-SB-108
	Sample ID	1024990	1024991	1024991	1024992	1024993	1024994	1024995
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	11:47	11:50	11:50	11:55	14:30	14:35	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0690-1249	AEL97001072	97-0691-1250	97-0692-1251	97-0693-1252	97-0695-1254	97-0696-1255
Constituent	Units							
Dichlorobenzene,1,2-	µg/kg		<9.4					
Dichlorobenzene,1,3-	µg/kg		<9.4					
Dichlorobenzene,1,4-	µg/kg		<9.4					
Dichlorobromomethane	µg/kg		<9.4					
Dichlorodifluoromethane	µg/kg		<9.4					
Dichloroethane,1,1-	µg/kg		<9.4					
Dichloroethane,1,2-	µg/kg		<9.4					
Dichloroethylene,1,1-	µg/kg		<9.4					
Dichloroethylene,1,2-	µg/kg							
Dichloroethylene,1,2-cis-	µg/kg		<9.4					
Dichloroethylene,1,2-trans-	µg/kg		<9.4					
Dichloropropane,1,2-	µg/kg		<9.4					
Dichloropropylene,1,3-cis-	µg/kg		<9.4					
Dichloropropylene,1,3-trans-	µg/kg		<9.4					
Ethylbenzene	µg/kg		<9.4					
Ethylbenzene (screening)	µg/kg	<17 nc		<17 nc	<17	<17	<17	<17
Ethylene Dibromide	µg/kg							
Hexanone,2-	µg/kg		<24					
Methyl Bromide	µg/kg		<9.4					
Methyl Chloride	µg/kg		<9.4					
Methyl Ethyl Ketone	µg/kg		<24					
Methyl-2-pentanone,4-	µg/kg		<24					
Methyl-tert-butyl Ether	µg/kg		<9.4					
Methylene Chloride	µg/kg		<9.4					
Styrene	µg/kg		<9.4					
Tetrachloroethane,1,1,1,2-	µg/kg		<9.4					
Tetrachloroethane,1,1,2,2-	µg/kg		<9.4					
Tetrachloroethylene	µg/kg		<9.4					

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-109
	Sample ID	1024996	1024997	1024997	1024998	1024998	1024999	1025000
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	14:50	14:58	14:58	14:58	14:58	15:00	15:25
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0697-1256	AEL97001178	97-0698-1257	AEL97001179	97-0699-1258	97-0700-1259	97-0701-1260
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/20/1997	01/29/1997	01/20/1997	01/29/1997	01/20/1997	01/20/1997	01/20/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-109
	Sample ID	1024996	1024997	1024997	1024998	1024998	1024999	1025000
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	14:50	14:58	14:58	14:58	14:58	15:00	15:25
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0697-1256	AEL97001178	97-0698-1257	AEL97001179	97-0699-1258	97-0700-1259	97-0701-1260
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg							
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether, 4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							
Chlorophenol, 2-	µg/kg							
Chlorophenyl Phenyl Ether, 4-	µg/kg							
Chrysene	µg/kg							
Cresol, 2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-109
	Sample ID	1024996	1024997	1024997	1024998	1024998	1024999	1025000
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	14:50	14:58	14:58	14:58	14:58	15:00	15:25
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0697-1256	AEL97001178	97-0698-1257	AEL97001179	97-0699-1258	97-0700-1259	97-0701-1260
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							
Dichlorophenol,2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol,2,4-	µg/kg							
Dinitro-o-cresol,4,6-	µg/kg							
Dinitrophenol,2,4-	µg/kg							
Dinitrotoluene,2,4-	µg/kg							
Dinitrotoluene,2,6-	µg/kg							
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-109
	Sample ID	1024996	1024997	1024997	1024998	1024998	1024999	1025000
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	14:50	14:58	14:58	14:58	14:58	15:00	15:25
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0697-1256	AEL97001178	97-0698-1257	AEL97001179	97-0699-1258	97-0700-1259	97-0701-1260
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg		<75		<34			
Acrolein	µg/kg		<34		<16			
Acrylonitrile	µg/kg		<34		<16			
Benzene	µg/kg		<14		<6.2			
Benzene (screening)	µg/kg	<8 nc		<8		<8	<8 nc	<8 nc
Bromobenzene	µg/kg		<14		<6.2			
Bromoform	µg/kg		<14		<6.2			
Carbon Disulfide	µg/kg		<14		<6.2			
Carbon Tetrachloride	µg/kg		<14		<6.2			
Chlorobenzene	µg/kg		<14		<6.2			
Chlorodibromomethane	µg/kg		<14		<6.2			
Chloroethane	µg/kg		<14		<6.2			
Chloroethyl Vinyl Ether,2-	µg/kg		<14		<6.2			
Chloroform	µg/kg		<14		<6.2			
Chlorotoluene,o-	µg/kg		<14		<6.2			
Chlorotoluene,p-	µg/kg		<14		<6.2			
Dibromomethane	µg/kg		<14		<6.2			

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-108	SK-SB-109
	Sample ID	1024996	1024997	1024997	1024998	1024998	1024999	1025000
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997
	Sample Time	14:50	14:58	14:58	14:58	14:58	15:00	15:25
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0697-1256	AEL97001178	97-0698-1257	AEL97001179	97-0699-1258	97-0700-1259	97-0701-1260
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg		<14		<6.2			
Dichlorobenzene, 1,3-	µg/kg		<14		<6.2			
Dichlorobenzene, 1,4-	µg/kg		<14		<6.2			
Dichlorobromomethane	µg/kg		<14		<6.2			
Dichlorodifluoromethane	µg/kg		<14		<6.2			
Dichloroethane, 1,1-	µg/kg		<14		<6.2			
Dichloroethane, 1,2-	µg/kg		<14		<6.2			
Dichloroethylene, 1,1-	µg/kg		<14		<6.2			
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg		<14		<6.2			
Dichloroethylene, 1,2-trans-	µg/kg		<14		<6.2			
Dichloropropane, 1,2-	µg/kg		<14		<6.2			
Dichloropropylene, 1,3-cis-	µg/kg		<14		<6.2			
Dichloropropylene, 1,3-trans-	µg/kg		<14		<6.2			
Ethylbenzene	µg/kg		<14		<6.2			
Ethylbenzene (screening)	µg/kg	<17 nc		<17		<16	<17 nc	<17 nc
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg		<34		<16			
Methyl Bromide	µg/kg		<14		<6.2			
Methyl Chloride	µg/kg		<14		<6.2			
Methyl Ethyl Ketone	µg/kg		<34		<16			
Methyl-2-pentanone, 4-	µg/kg		<34		<16			
Methyl-tert-butyl Ether	µg/kg		<14		<6.2			
Methylene Chloride	µg/kg		<14		<6.2			
Styrene	µg/kg		<14		<6.2			
Tetrachloroethane, 1,1,1,2-	µg/kg		<14		<6.2			
Tetrachloroethane, 1,1,2,2-	µg/kg		<14		<6.2			
Tetrachloroethylene	µg/kg		<14		<6.2			

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-110
	Sample ID	1025001	1025002	1025003	1025004	1025004	1025005	1025010
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/20/1997
	Sample Time	15:27	15:32	15:35	15:40	15:40	15:45	11:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	LEA	LEA	AEI	LEA	LEA	LEA
	Lab. Number	97-0702-003	97-0703-004	97-0704-005	AEI 97001073	97-0705-006	97-0706-007	97-0764-069
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/20/1997	01/20/1997	01/20/1997	01/28/1997	01/20/1997	01/20/1997	01/21/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-110
	Sample ID	1025001	1025002	1025003	1025004	1025004	1025005	1025010
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/20/1997
	Sample Time	15:27	15:32	15:35	15:40	15:40	15:45	11:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0702-003	97-0703-004	97-0704-005	AEL 97001073	97-0705-006	97-0706-007	97-0764-069
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg							
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether, 4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							
Chlorophenol, 2-	µg/kg							
Chlorophenyl Phenyl Ether, 4-	µg/kg							
Chrysene	µg/kg							
Cresol, 2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-110
	Sample ID	1025001	1025002	1025003	1025004	1025004	1025005	1025010
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/20/1997
	Sample Time	15:27	15:32	15:35	15:40	15:40	15:45	11:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0702-003	97-0703-004	97-0704-005	AEL97001073	97-0705-006	97-0706-007	97-0764-069
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							
Dichlorophenol,2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol,2,4-	µg/kg							
Dinitro-o-cresol,4,6-	µg/kg							
Dinitrophenol,2,4-	µg/kg							
Dinitrotoluene,2,4-	µg/kg							
Dinitrotoluene,2,6-	µg/kg							
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-110
	Sample ID	1025001	1025002	1025003	1025004	1025004	1025005	1025010
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/20/1997
	Sample Time	15:27	15:32	15:35	15:40	15:40	15:45	11:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	LEA	LEA	AEI	LEA	LEA	LEA
	Lab. Number	97-0702-003	97-0703-004	97-0704-005	AEI.97001073	97-0705-006	97-0706-007	97-0764-069
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg				<46			
Acrolein	µg/kg				<14			
Acrylonitrile	µg/kg				<14			
Benzene	µg/kg				<5.5			
Benzene (screening)	µg/kg	<8	<8 nc	<8 nc		<8	<8	<8
Bromobenzene	µg/kg				<5.5			
Bromoform	µg/kg				<5.5			
Carbon Disulfide	µg/kg				<5.5			
Carbon Tetrachloride	µg/kg				<5.5			
Chlorobenzene	µg/kg				<5.5			
Chlorodibromomethane	µg/kg				<5.5			
Chloroethane	µg/kg				<5.5			
Chloroethyl Vinyl Ether,2-	µg/kg				<5.5			
Chloroform	µg/kg				<5.5			
Chlorotoluene,o-	µg/kg				<5.5			
Chlorotoluene,p-	µg/kg				<5.5			
Dibromomethane	µg/kg				<5.5			

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	Location ID	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-109	SK-SB-110
	Sample ID	1025001	1025002	1025003	1025004	1025004	1025005	1025010
	Sample Date	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/16/1997	01/20/1997
	Sample Time	15:27	15:32	15:35	15:40	15:40	15:45	11:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	LEA	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	97-0702-003	97-0703-004	97-0704-005	AEL97001073	97-0705-006	97-0706-007	97-0764-069
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg				<5.5			
Dichlorobenzene, 1,3-	µg/kg				<5.5			
Dichlorobenzene, 1,4-	µg/kg				<5.5			
Dichlorobromomethane	µg/kg				<5.5			
Dichlorodifluoromethane	µg/kg				<5.5			
Dichloroethane, 1,1-	µg/kg				<5.5			
Dichloroethane, 1,2-	µg/kg				<5.5			
Dichloroethylene, 1,1-	µg/kg				<5.5			
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg				<5.5			
Dichloroethylene, 1,2-trans-	µg/kg				<5.5			
Dichloropropane, 1,2-	µg/kg				<5.5			
Dichloropropylene, 1,3-cis-	µg/kg				<5.5			
Dichloropropylene, 1,3-trans-	µg/kg				<5.5			
Ethylbenzene	µg/kg				<5.5			
Ethylbenzene (screening)	µg/kg	<17	<18 nc	<17 nc		<17	<17	<17
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg				<14			
Methyl Bromide	µg/kg				<5.5			
Methyl Chloride	µg/kg				<5.5			
Methyl Ethyl Ketone	µg/kg				<14			
Methyl-2-pentanone, 4-	µg/kg				<14			
Methyl-tert-butyl Ether	µg/kg				<5.5			
Methylene Chloride	µg/kg				<8.3			
Styrene	µg/kg				<5.5			
Tetrachloroethane, 1,1,1,2-	µg/kg				<5.5			
Tetrachloroethane, 1,1,2,2-	µg/kg				<5.5			
Tetrachloroethylene	µg/kg				<5.5			

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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110
	Sample ID	1025011	1025012	1025012	1025013	1025013	1025014	1025015
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:05	11:12	11:12	11:15	11:15	11:15	11:23
	Sample Depth	2' - 4'	4' - 6'	4' - 6'	6' - 8'	6' - 8'	6' - 8'	8' - 10'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	AEL
	Lab. Number	97-0765-070	AEL97001074	97-0766-071	AEL97001075	97-0771-076	97-0772-077	AEL97001076
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/21/1997	01/28/1997	01/21/1997	01/29/1997	01/21/1997	01/21/1997	01/28/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-		01/29/1997		01/29/1997			01/29/1997
Date Semi-volatile Organics Analyzed	-							01/31/1997
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110
	Sample ID	1025011	1025012	1025012	1025013	1025013	1025014	1025015
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:05	11:12	11:12	11:15	11:15	11:15	11:23
	Sample Depth	2' - 4'	4' - 6'	4' - 6'	6' - 8'	6' - 8'	6' - 8'	8' - 10'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	AEL
	Lab. Number	97-0765-070	AEL97001074	97-0766-071	AEL97001075	97-0771-076	97-0772-077	AEL97001076
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							<420
Hexachlorocyclopentadiene	µg/kg							<420
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg		<36.8		9370			<41.0
Acenaphthene	µg/kg							<420
Acenaphthylene	µg/kg							<420
Anthracene	µg/kg							<420
Benzidine	µg/kg							<420
Benzo[a]anthracene	µg/kg							<420
Benzo[a]pyrene	µg/kg							<420
Benzo[b]fluoranthene	µg/kg							<420
Benzo[ghi]perylene	µg/kg							<420
Benzo[k]fluoranthene	µg/kg							<420
Bis(2-chloroethoxy)methane	µg/kg							<420
Bis(2-chloroethyl) Ether	µg/kg							<420
Bis(2-ethylhexyl) Phthalate	µg/kg							<420
Bromophenyl Phenyl Ether,4-	µg/kg							<420
Butyl Benzyl Phthalate	µg/kg							<420
Carbazole	µg/kg							
Chloroaniline,4-	µg/kg							
Chloronaphthalene,2-	µg/kg							<420
Chlorophenol,2-	µg/kg							<420
Chlorophenyl Phenyl Ether,4-	µg/kg							<420
Chrysene	µg/kg							<420
Cresol,2-	µg/kg							

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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110
	Sample ID	1025011	1025012	1025012	1025013	1025013	1025014	1025015
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:05	11:12	11:12	11:15	11:15	11:15	11:23
	Sample Depth	2' - 4'	4' - 6'	4' - 6'	6' - 8'	6' - 8'	6' - 8'	8' - 10'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	AEL
	Lab. Number	97-0765-070	AEL97001074	97-0766-071	AEL97001075	97-0771-076	97-0772-077	AEL97001076
Constituent	Units							
Cresol, 4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							<670
Di-n-octyl Phthalate	µg/kg							<420
Dibenzo[a,h]anthracene	µg/kg							<420
Dibenzofuran	µg/kg							
Dichlorobenzidine, 3,3'-	µg/kg							<420
Dichlorophenol, 2,4-	µg/kg							<420
Diethyl Phthalate	µg/kg							<420
Dimethyl Phthalate	µg/kg							<420
Dimethylphenol, 2,4-	µg/kg							<420
Dinitro-o-cresol, 4,6-	µg/kg							<420
Dinitrophenol, 2,4-	µg/kg							<420
Dinitrotoluene, 2,4-	µg/kg							<420
Dinitrotoluene, 2,6-	µg/kg							<420
Diphenylhydrazine, 1,2-	µg/kg							<420
Fluoranthene	µg/kg							<420
Fluorene	µg/kg							<420
Hexachlorobutadiene	µg/kg							<420
Hexachloroethane	µg/kg							<420
Indeno(1,2,3-cd)pyrene	µg/kg							<420
Isophorone	µg/kg							<420
Methylnaphthalene, 2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							<420
N-nitrosodimethylamine	µg/kg							<420
N-nitrosodiphenylamine	µg/kg							<420
Naphthalene	µg/kg							<420
Nitroaniline, 2-	µg/kg							
Nitroaniline, 3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110
	Sample ID	1025011	1025012	1025012	1025013	1025013	1025014	1025015
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:05	11:12	11:12	11:15	11:15	11:15	11:23
	Sample Depth	2' - 4'	4' - 6'	4' - 6'	6' - 8'	6' - 8'	6' - 8'	8' - 10'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	AEL
	Lab. Number	97-0765-070	AEL97001074	97-0766-071	AEL97001075	97-0771-076	97-0772-077	AEL97001076
Constituent	Units							
Nitroaniline, 4-	µg/kg							
Nitrobenzene	µg/kg							<420
Nitrophenol, 2-	µg/kg							<420
Nitrophenol, 4-	µg/kg							<420
Pentachlorophenol	µg/kg							<420
Phenanthrene	µg/kg							<420
Phenol	µg/kg							<420
Propane), 2,2'-oxybis(2-chloro-	µg/kg							<420
Pyrene	µg/kg							<420
Trichlorophenol, 2,4,5-	µg/kg							
Trichlorophenol, 2,4,6-	µg/kg							<420
Acetone	µg/kg		<27		<4700			<65
Acrolein	µg/kg		<14		<40 UJ4			<23
Acrylonitrile	µg/kg		<14		<40 UJ4			<23
Benzene	µg/kg		<5.5		<16 UJ4			<9.0
Benzene (screening)	µg/kg	<8		<8		<41 nc	<39	
Bromobenzene	µg/kg		<5.5		<16 UJ4			<9.0
Bromoform	µg/kg		<5.5		<16 UJ4			<9.0
Carbon Disulfide	µg/kg		<5.5		<16 UJ4			<9.0
Carbon Tetrachloride	µg/kg		<5.5		<16 UJ4			<9.0
Chlorobenzene	µg/kg		<5.5		<16 UJ4			<9.0
Chlorodibromomethane	µg/kg		<5.5		<16 UJ4			<9.0
Chloroethane	µg/kg		<5.5		<16 UJ4			<9.0
Chloroethyl Vinyl Ether, 2-	µg/kg		<5.5		<16 UJ4			<9.0
Chloroform	µg/kg		<5.5		<16 UJ4			<9.0
Chlorotoluene, o-	µg/kg		<5.5		<16 UJ4			<9.0
Chlorotoluene, p-	µg/kg		<5.5		<16 UJ4			<9.0
Dibromomethane	µg/kg		<5.5		<16 UJ4			<9.0

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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-110
	Sample ID	1025011	1025012	1025012	1025013	1025013	1025014	1025015
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:05	11:12	11:12	11:15	11:15	11:15	11:23
	Sample Depth	2' - 4'	4' - 6'	4' - 6'	6' - 8'	6' - 8'	6' - 8'	8' - 10'
	Laboratory	LEA	AEL	LEA	AEL	LEA	LEA	AEL
	Lab. Number	97-0765-070	AEL97001074	97-0766-071	AEL97001075	97-0771-076	97-0772-077	AEL97001076
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg		<5.5		<16 UJ4			<9.0
Dichlorobenzene, 1,3-	µg/kg		<5.5		<16 UJ4			<9.0
Dichlorobenzene, 1,4-	µg/kg		<5.5		<16 UJ4			<9.0
Dichlorobromomethane	µg/kg		<5.5		<16 UJ4			<9.0
Dichlorodifluoromethane	µg/kg		<5.5		<16 UJ4			<9.0
Dichloroethane, 1,1-	µg/kg		<5.5		<16 UJ4			<9.0
Dichloroethane, 1,2-	µg/kg		<5.5		<16 UJ4			<9.0
Dichloroethylene, 1,1-	µg/kg		<5.5		<16 UJ4			<9.0
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg		5.5		<16 UJ4			<9.0
Dichloroethylene, 1,2-trans-	µg/kg		<5.5		<16 UJ4			<9.0
Dichloropropane, 1,2-	µg/kg		<5.5		<16 UJ4			<9.0
Dichloropropylene, 1,3-cis-	µg/kg		<5.5		<16 UJ4			<9.0
Dichloropropylene, 1,3-trans-	µg/kg		<5.5		<16 UJ4			<9.0
Ethylbenzene	µg/kg		<5.5		550 J10J11			<9.0
Ethylbenzene (screening)	µg/kg	<17		<17		<87 nc	<84	
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg		<14		<40 UJ4			<23
Methyl Bromide	µg/kg		<5.5		<16 UJ4			<9.0
Methyl Chloride	µg/kg		<5.5		<16 UJ4			<9.0
Methyl Ethyl Ketone	µg/kg		<14		<40 UJ4			<23
Methyl-2-pentanone, 4-	µg/kg		14		<40 UJ4			<23
Methyl-tert-butyl Ether	µg/kg		5.5		<16 UJ4			<9.0
Methylene Chloride	µg/kg		<5.5		<48 UJ4			<9.0
Styrene	µg/kg		<5.5		<16 UJ4			<9.0
Tetrachloroethane, 1,1,1,2-	µg/kg		<5.5		<16 UJ4			<9.0
Tetrachloroethane, 1,1,2,2-	µg/kg		<5.5		<16 UJ4			<9.0
Tetrachloroethylene	µg/kg		<5.5		<16 UJ4			<9.0

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111
	Sample ID	1025015	1025016	1025016	1025017	1025018	1025019	1025020
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:23	11:25	11:25	13:29	13:30	13:41	13:43
	Sample Depth	8' - 10'	10' - 12'	10' - 12'	0' - 2'	2' - 4'	4' - 6'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	97-0774-079	AEL97001077	97-0775-080	97-0776-081	97-0777-082	97-0778-083	AEL97001078
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/21/1997	01/28/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/29/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-		01/29/1997					01/29/1997
Date Semi-volatile Organics Analyzed	-							01/31/1997
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111
	Sample ID	1025015	1025016	1025016	1025017	1025018	1025019	1025020
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:23	11:25	11:25	13:29	13:30	13:41	13:43
	Sample Depth	8' - 10'	10' - 12'	10' - 12'	0' - 2'	2' - 4'	4' - 6'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	97-0774-079	AEL97001077	97-0775-080	97-0776-081	97-0777-082	97-0778-083	AEL97001078
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							<380
Hexachlorocyclopentadiene	µg/kg							<380
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg		<42.8					41.7
Acenaphthene	µg/kg							<380
Acenaphthylene	µg/kg							<380
Anthracene	µg/kg							<380
Benidine	µg/kg							<380
Benzo[a]anthracene	µg/kg							<380
Benzo[a]pyrene	µg/kg							<380
Benzo[b]fluoranthene	µg/kg							<380
Benzo[ghi]perylene	µg/kg							<380
Benzo[k]fluoranthene	µg/kg							<380
Bis(2-chloroethoxy)methane	µg/kg							<380
Bis(2-chloroethyl) Ether	µg/kg							<380
Bis(2-ethylhexyl) Phthalate	µg/kg							<380
Bromophenyl Phenyl Ether, 4-	µg/kg							<380
Butyl Benzyl Phthalate	µg/kg							<380
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							<380
Chlorophenol, 2-	µg/kg							<380
Chlorophenyl Phenyl Ether, 4-	µg/kg							<380
Chrysene	µg/kg							<380
Cresol, 2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111
	Sample ID	1025015	1025016	1025016	1025017	1025018	1025019	1025020
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:23	11:25	11:25	13:29	13:30	13:41	13:43
	Sample Depth	8' - 10'	10' - 12'	10' - 12'	0' - 2'	2' - 4'	4' - 6'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	97-0774-079	AEL97001077	97-0775-080	97-0776-081	97-0777-082	97-0778-083	AEL97001078
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							<380
Di-n-octyl Phthalate	µg/kg							<380
Dibenzo[a,h]anthracene	µg/kg							<380
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							<380
Dichlorophenol,2,4-	µg/kg							<380
Diethyl Phthalate	µg/kg							<380
Dimethyl Phthalate	µg/kg							<380
Dimethylphenol,2,4-	µg/kg							<380
Dinitro-o-cresol,4,6-	µg/kg							<380 UJ1
Dinitrophenol,2,4-	µg/kg							<380
Dinitrotoluene,2,4-	µg/kg							<380
Dinitrotoluene,2,6-	µg/kg							<380
Diphenylhydrazine,1,2-	µg/kg							<380
Fluoranthene	µg/kg							<380
Fluorene	µg/kg							<380
Hexachlorobutadiene	µg/kg							<380
Hexachloroethane	µg/kg							<380
Indeno(1,2,3-cd)pyrene	µg/kg							<380
Isophorone	µg/kg							<380
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							<380
N-nitrosodimethylamine	µg/kg							<380
N-nitrosodiphenylamine	µg/kg							<380
Naphthalene	µg/kg							<380
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111
	Sample ID	1025015	1025016	1025016	1025017	1025018	1025019	1025020
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:23	11:25	11:25	13:29	13:30	13:41	13:43
	Sample Depth	8' - 10'	10' - 12'	10' - 12'	0' - 2'	2' - 4'	4' - 6'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	97-0774-079	AEL97001077	97-0775-080	97-0776-081	97-0777-082	97-0778-083	AEL97001078
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							<380
Nitrophenol,2-	µg/kg							<380
Nitrophenol,4-	µg/kg							<380
Pentachlorophenol	µg/kg							<380
Phenanthrene	µg/kg							<380
Phenol	µg/kg							<380
Propane),2,2'-oxybis(2-chloro-	µg/kg							<380
Pyrene	µg/kg							<380
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							<380
Acetone	µg/kg		<65					<95
Acrolein	µg/kg		<33					<47
Acrylonitrile	µg/kg		<33					<47
Benzene	µg/kg		<13					<19
Benzene (screening)	µg/kg	<40		<8	<8 nc	<8	<8 nc	
Bromobenzene	µg/kg		<13					<19
Bromoform	µg/kg		<13					<19
Carbon Disulfide	µg/kg		<13					<19
Carbon Tetrachloride	µg/kg		<13					<19
Chlorobenzene	µg/kg		<13					<19
Chlorodibromomethane	µg/kg		<13					<19
Chloroethane	µg/kg		<13					<19
Chloroethyl Vinyl Ether,2-	µg/kg		<13					<19
Chloroform	µg/kg		<13					<19
Chlorotoluene,o-	µg/kg		<13					<19
Chlorotoluene,p-	µg/kg		<13					<19
Dibromomethane	µg/kg		<13					<19

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	Location ID	SK-SB-110	SK-SB-110	SK-SB-110	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111
	Sample ID	1025015	1025016	1025016	1025017	1025018	1025019	1025020
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	11:23	11:25	11:25	13:29	13:30	13:41	13:43
	Sample Depth	8' - 10'	10' - 12'	10' - 12'	0' - 2'	2' - 4'	4' - 6'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	97-0774-079	AEL97001077	97-0775-080	97-0776-081	97-0777-082	97-0778-083	AEL97001078
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg		<13					<19
Dichlorobenzene, 1,3-	µg/kg		<13					<19
Dichlorobenzene, 1,4-	µg/kg		<13					<19
Dichlorobromomethane	µg/kg		<13					<19
Dichlorodifluoromethane	µg/kg		<13					<19
Dichloroethane, 1,1-	µg/kg		<13					<19
Dichloroethane, 1,2-	µg/kg		<13					<19
Dichloroethylene, 1,1-	µg/kg		<13					<19
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg		<13					<19
Dichloroethylene, 1,2-trans-	µg/kg		<13					<19
Dichloropropane, 1,2-	µg/kg		<13					<19
Dichloropropylene, 1,3-cis-	µg/kg		<13					<19
Dichloropropylene, 1,3-trans-	µg/kg		<13					<19
Ethylbenzene	µg/kg		<13					<19
Ethylbenzene (screening)	µg/kg	<86		<17	<17 nc	<17	<17 nc	
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg		<33					<47
Methyl Bromide	µg/kg		<13					<19
Methyl Chloride	µg/kg		<13					<19
Methyl Ethyl Ketone	µg/kg		<33					<47
Methyl-2-pentanone, 4-	µg/kg		<33					<47
Methyl-tert-butyl Ether	µg/kg		<13					<19
Methylene Chloride	µg/kg		<13					<19
Styrene	µg/kg		<13					<19
Tetrachloroethane, 1,1,1,2-	µg/kg		<13					<19
Tetrachloroethane, 1,1,2,2-	µg/kg		<13					<19
Tetrachloroethylene	µg/kg		13					<19

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-112	SK-SB-112	SK-SB-112
	Sample ID	1025020	1025021	1025021	1025022	1025023	1025024	1025025
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	13:43	13:51	13:51	13:54	14:34	14:37	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0779-084	AEL97001079	97-0780-085	97-0781-086	97-0782-087	97-0783-088	97-0784-089
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/21/1997		01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-		01/29/1997					
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-112	SK-SB-112	SK-SB-112
	Sample ID	1025020	1025021	1025021	1025022	1025023	1025024	1025025
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	13:43	13:51	13:51	13:54	14:34	14:37	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0779-084	AEL97001079	97-0780-085	97-0781-086	97-0782-087	97-0783-088	97-0784-089
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg		<42.3					
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether, 4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							
Chlorophenol, 2-	µg/kg							
Chlorophenyl Phenyl Ether, 4-	µg/kg							
Chrysene	µg/kg							
Cresol, 2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-112	SK-SB-112	SK-SB-112
	Sample ID	1025020	1025021	1025021	1025022	1025023	1025024	1025025
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	13:43	13:51	13:51	13:54	14:34	14:37	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0779-084	AEL97001079	97-0780-085	97-0781-086	97-0782-087	97-0783-088	97-0784-089
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							
Dichlorophenol,2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol,2,4-	µg/kg							
Dinitro-o-cresol,4,6-	µg/kg							
Dinitrophenol,2,4-	µg/kg							
Dinitrotoluene,2,4-	µg/kg							
Dinitrotoluene,2,6-	µg/kg							
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-112	SK-SB-112	SK-SB-112
	Sample ID	1025020	1025021	1025021	1025022	1025023	1025024	1025025
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	13:43	13:51	13:51	13:54	14:34	14:37	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0779-084	AEL97001079	97-0780-085	97-0781-086	97-0782-087	97-0783-088	97-0784-089
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg							
Acrolein	µg/kg							
Acrylonitrile	µg/kg							
Benzene	µg/kg							
Benzene (screening)	µg/kg	<8		<8	<8	<8	<8	<8
Bromobenzene	µg/kg							
Bromoform	µg/kg							
Carbon Disulfide	µg/kg							
Carbon Tetrachloride	µg/kg							
Chlorobenzene	µg/kg							
Chlorodibromomethane	µg/kg							
Chloroethane	µg/kg							
Chloroethyl Vinyl Ether,2-	µg/kg							
Chloroform	µg/kg							
Chlorotoluene,o-	µg/kg							
Chlorotoluene,p-	µg/kg							
Dibromomethane	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-111	SK-SB-112	SK-SB-112	SK-SB-112
	Sample ID	1025020	1025021	1025021	1025022	1025023	1025024	1025025
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	13:43	13:51	13:51	13:54	14:34	14:37	14:45
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0779-084	AEL97001079	97-0780-085	97-0781-086	97-0782-087	97-0783-088	97-0784-089
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg							
Dichlorobenzene, 1,3-	µg/kg							
Dichlorobenzene, 1,4-	µg/kg							
Dichlorobromomethane	µg/kg							
Dichlorodifluoromethane	µg/kg							
Dichloroethane, 1,1-	µg/kg							
Dichloroethane, 1,2-	µg/kg							
Dichloroethylene, 1,1-	µg/kg							
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg							
Dichloroethylene, 1,2-trans-	µg/kg							
Dichloropropane, 1,2-	µg/kg							
Dichloropropylene, 1,3-cis-	µg/kg							
Dichloropropylene, 1,3-trans-	µg/kg							
Ethylbenzene	µg/kg							
Ethylbenzene (screening)	µg/kg	<17		<17	<17	<17	<17	<17
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg							
Methyl Bromide	µg/kg							
Methyl Chloride	µg/kg							
Methyl Ethyl Ketone	µg/kg							
Methyl-2-pentanone, 4-	µg/kg							
Methyl-tert-butyl Ether	µg/kg							
Methylene Chloride	µg/kg							
Styrene	µg/kg							
Tetrachloroethane, 1,1,1,2-	µg/kg							
Tetrachloroethane, 1,1,2,2-	µg/kg							
Tetrachloroethylene	µg/kg							

Notes: 1. Printed on 11/16/98

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Notes: 1. Printed on 11/16/98



Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-113	SK-SB-113	SK-SB-113
	Sample ID	1025026	1025026	1025027	1025028	1025029	1025031	1025032
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	14:47	14:47	14:55	14:59	15:20	15:35	15:37
	Sample Depth	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	4' - 6'	6' - 8'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL97001080	97-0785-090	97-0788-093	97-0789-094	97-0790-095	97-0791-096	AEL97001081
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/29/1997	01/21/1997	01/22/1997	01/22/1997	01/22/1997	01/22/1997	
Date PCBs Analyzed	-							
Date Physical Analyzed	-	01/29/1997						01/29/1997
Date Semi-volatile Organics Analyzed	-	01/31/1997						
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-113	SK-SB-113	SK-SB-113
	Sample ID	1025026	1025026	1025027	1025028	1025029	1025031	1025032
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	14:47	14:47	14:55	14:59	15:20	15:35	15:37
	Sample Depth	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	4' - 6'	6' - 8'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL97001080	97-0785-090	97-0788-093	97-0789-094	97-0790-095	97-0791-096	AEL97001081
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg	<420						
Hexachlorocyclopentadiene	µg/kg	<420						
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg	<41.3						<39.9
Acenaphthene	µg/kg	<420						
Acenaphthylene	µg/kg	<420						
Anthracene	µg/kg	<420						
Benzidine	µg/kg	<420						
Benzo[a]anthracene	µg/kg	<420						
Benzo[a]pyrene	µg/kg	<420						
Benzo[b]fluoranthene	µg/kg	<420						
Benzo[ghi]perylene	µg/kg	<420						
Benzo[k]fluoranthene	µg/kg	<420						
Bis(2-chloroethoxy)methane	µg/kg	<420						
Bis(2-chloroethyl) Ether	µg/kg	<420						
Bis(2-ethylhexyl) Phthalate	µg/kg	<420						
Bromophenyl Phenyl Ether, 4-	µg/kg	<420						
Butyl Benzyl Phthalate	µg/kg	<420						
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg	<420						
Chlorophenol, 2-	µg/kg	<420						
Chlorophenyl Phenyl Ether, 4-	µg/kg	<420						
Chrysene	µg/kg	<420						
Cresol, 2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-113	SK-SB-113	SK-SB-113
	Sample ID	1025026	1025026	1025027	1025028	1025029	1025031	1025032
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	14:47	14:47	14:55	14:59	15:20	15:35	15:37
	Sample Depth	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	4' - 6'	6' - 8'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL97001080	97-0785-090	97-0788-093	97-0789-094	97-0790-095	97-0791-096	AEL97001081
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg	<630						
Di-n-octyl Phthalate	µg/kg	<420						
Dibenzo[a,h]anthracene	µg/kg	<420						
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg	<420						
Dichlorophenol,2,4-	µg/kg	<420						
Diethyl Phthalate	µg/kg	<420						
Dimethyl Phthalate	µg/kg	<420						
Dimethylphenol,2,4-	µg/kg	<420						
Dinitro-o-cresol,4,6-	µg/kg	<420 UJ1						
Dinitrophenol,2,4-	µg/kg	<420						
Dinitrotoluene,2,4-	µg/kg	<420						
Dinitrotoluene,2,6-	µg/kg	<420						
Diphenylhydrazine,1,2-	µg/kg	<420						
Fluoranthene	µg/kg	<420						
Fluorene	µg/kg	<420						
Hexachlorobutadiene	µg/kg	<420						
Hexachloroethane	µg/kg	<420						
Indeno(1,2,3-cd)pyrene	µg/kg	<420						
Isophorone	µg/kg	<420						
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg	<420						
N-nitrosodimethylamine	µg/kg	<420						
N-nitrosodiphenylamine	µg/kg	<420						
Naphthalene	µg/kg	<420						
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-113	SK-SB-113	SK-SB-113
	Sample ID	1025026	1025026	1025027	1025028	1025029	1025031	1025032
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	14:47	14:47	14:55	14:59	15:20	15:35	15:37
	Sample Depth	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	4' - 6'	6' - 8'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL97001080	97-0785-090	97-0788-093	97-0789-094	97-0790-095	97-0791-096	AEL97001081
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg	<420						
Nitrophenol,2-	µg/kg	<420						
Nitrophenol,4-	µg/kg	<420						
Pentachlorophenol	µg/kg	<420						
Phenanthrene	µg/kg	<420						
Phenol	µg/kg	<420						
Propane),2,2'-oxybis(2-chloro-	µg/kg	<420						
Pyrene	µg/kg	<420						
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg	<420						
Acetone	µg/kg	<41						
Acrolein	µg/kg	<20						
Acrylonitrile	µg/kg	<20						
Benzene	µg/kg	<8.1						
Benzene (screening)	µg/kg		<8	<8	<8 nc	<8 nc	<8	
Bromobenzene	µg/kg	<8.1						
Bromoform	µg/kg	<8.1						
Carbon Disulfide	µg/kg	<8.1						
Carbon Tetrachloride	µg/kg	<8.1						
Chlorobenzene	µg/kg	<8.1						
Chlorodibromomethane	µg/kg	<8.1						
Chloroethane	µg/kg	<8.1						
Chloroethyl Vinyl Ether,2-	µg/kg	<8.1						
Chloroform	µg/kg	<8.1						
Chlorotoluene,o-	µg/kg	<8.1						
Chlorotoluene,p-	µg/kg	<8.1						
Dibromomethane	µg/kg	<8.1						

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-112	SK-SB-113	SK-SB-113	SK-SB-113
	Sample ID	1025026	1025026	1025027	1025028	1025029	1025031	1025032
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/20/1997
	Sample Time	14:47	14:47	14:55	14:59	15:20	15:35	15:37
	Sample Depth	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	4' - 6'	6' - 8'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL97001080	97-0785-090	97-0788-093	97-0789-094	97-0790-095	97-0791-096	AEL97001081
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg	<8.1						
Dichlorobenzene, 1,3-	µg/kg	<8.1						
Dichlorobenzene, 1,4-	µg/kg	<8.1						
Dichlorobromomethane	µg/kg	<8.1						
Dichlorodifluoromethane	µg/kg	<8.1						
Dichloroethane, 1,1-	µg/kg	<8.1						
Dichloroethane, 1,2-	µg/kg	<8.1						
Dichloroethylene, 1,1-	µg/kg	<8.1						
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg	<8.1						
Dichloroethylene, 1,2-trans-	µg/kg	<8.1						
Dichloropropane, 1,2-	µg/kg	<8.1						
Dichloropropylene, 1,3-cis-	µg/kg	<8.1						
Dichloropropylene, 1,3-trans-	µg/kg	<8.1						
Ethylbenzene	µg/kg	<8.1						
Ethylbenzene (screening)	µg/kg		<16	<17	<17 nc	<17 nc	<17	
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg	<20						
Methyl Bromide	µg/kg	<8.1						
Methyl Chloride	µg/kg	<8.1						
Methyl Ethyl Ketone	µg/kg	<20						
Methyl-2-pentanone, 4-	µg/kg	<20						
Methyl-tert-butyl Ether	µg/kg	<8.1						
Methylene Chloride	µg/kg	<8.1						
Styrene	µg/kg	<8.1						
Tetrachloroethane, 1,1,1,2-	µg/kg	<8.1						
Tetrachloroethane, 1,1,2,2-	µg/kg	<8.1						
Tetrachloroethylene	µg/kg	<8.1						

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P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-114	SK-SB-114	SK-SB-114
	Sample ID	1025032	1025033	1025033	1025034	1025037	1025038	1025039
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	15:37	15:45	15:45	15:59	09:50	09:55	10:10
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0792-097	AEL97001082	97-0793-098	97-0794-099	97-0812-119	97-0813-120	97-0814-121
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/22/1997	01/29/1997	01/22/1997	01/22/1997	01/22/1997	01/22/1997	01/22/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-		01/29/1997					
Date Semi-volatile Organics Analyzed	-		01/31/1997					
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
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P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-114	SK-SB-114	SK-SB-114
	Sample ID	1025032	1025033	1025033	1025034	1025037	1025038	1025039
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	15:37	15:45	15:45	15:59	09:50	09:55	10:10
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0792-097	AEL97001082	97-0793-098	97-0794-099	97-0812-119	97-0813-120	97-0814-121
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg		<410					
Hexachlorocyclopentadiene	µg/kg		<410					
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg		<40.0					
Acenaphthene	µg/kg		<410					
Acenaphthylene	µg/kg		<410					
Anthracene	µg/kg		<410					
Benzidine	µg/kg		<410					
Benzo[a]anthracene	µg/kg		<410					
Benzo[a]pyrene	µg/kg		<410					
Benzo[b]fluoranthene	µg/kg		<410					
Benzo[ghi]perylene	µg/kg		<410					
Benzo[k]fluoranthene	µg/kg		<410					
Bis(2-chloroethoxy)methane	µg/kg		<410					
Bis(2-chloroethyl) Ether	µg/kg		<410					
Bis(2-ethylhexyl) Phthalate	µg/kg		<410					
Bromophenyl Phenyl Ether,4-	µg/kg		<410					
Butyl Benzyl Phthalate	µg/kg		<410					
Carbazole	µg/kg							
Chloroaniline,4-	µg/kg							
Chloronaphthalene,2-	µg/kg		<410					
Chlorophenol,2-	µg/kg		<410					
Chlorophenyl Phenyl Ether,4-	µg/kg		<410					
Chrysene	µg/kg		<410					
Cresol,2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-114	SK-SB-114	SK-SB-114
	Sample ID	1025032	1025033	1025033	1025034	1025037	1025038	1025039
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	15:37	15:45	15:45	15:59	09:50	09:55	10:10
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0792-097	AEL97001082	97-0793-098	97-0794-099	97-0812-119	97-0813-120	97-0814-121
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg		<410					
Di-n-octyl Phthalate	µg/kg		<410					
Dibenzo[a,h]anthracene	µg/kg		<410					
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg		<410					
Dichlorophenol,2,4-	µg/kg		<410					
Diethyl Phthalate	µg/kg		<410					
Dimethyl Phthalate	µg/kg		<410					
Dimethylphenol,2,4-	µg/kg		<410					
Dinitro-o-cresol,4,6-	µg/kg		<410 UJ1					
Dinitrophenol,2,4-	µg/kg		<410					
Dinitrotoluene,2,4-	µg/kg		<410					
Dinitrotoluene,2,6-	µg/kg		<410					
Diphenylhydrazine,1,2-	µg/kg		<410					
Fluoranthene	µg/kg		<410					
Fluorene	µg/kg		<410					
Hexachlorobutadiene	µg/kg		<410					
Hexachloroethane	µg/kg		<410					
Indeno(1,2,3-cd)pyrene	µg/kg		<410					
Isophorone	µg/kg		<410					
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg		<410					
N-nitrosodimethylamine	µg/kg		<410					
N-nitrosodiphenylamine	µg/kg		<410					
Naphthalene	µg/kg		<410					
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-114	SK-SB-114	SK-SB-114
	Sample ID	1025032	1025033	1025033	1025034	1025037	1025038	1025039
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	15:37	15:45	15:45	15:59	09:50	09:55	10:10
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0792-097	AEL97001082	97-0793-098	97-0794-099	97-0812-119	97-0813-120	97-0814-121
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg		<410					
Nitrophenol,2-	µg/kg		<410					
Nitrophenol,4-	µg/kg		<410					
Pentachlorophenol	µg/kg		<410					
Phenanthrene	µg/kg		<410					
Phenol	µg/kg		<410					
Propane),2,2'-oxybis(2-chloro-	µg/kg		<410					
Pyrene	µg/kg		<410					
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg		410					
Acetone	µg/kg		38					
Acrolein	µg/kg		13					
Acrylonitrile	µg/kg		13					
Benzene	µg/kg		5.1					
Benzene (screening)	µg/kg	<8		<8	<8	<8 nc	<8 nc	<8
Bromobenzene	µg/kg		5.1					
Bromoform	µg/kg		<5.1					
Carbon Disulfide	µg/kg		<5.1					
Carbon Tetrachloride	µg/kg		<5.1					
Chlorobenzene	µg/kg		<5.1					
Chlorodibromomethane	µg/kg		<5.1					
Chloroethane	µg/kg		<5.1					
Chloroethyl Vinyl Ether,2-	µg/kg		<5.1					
Chloroform	µg/kg		<5.1					
Chlorotoluene,o-	µg/kg		<5.1					
Chlorotoluene,p-	µg/kg		<5.1					
Dibromomethane	µg/kg		<5.1					

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-113	SK-SB-114	SK-SB-114	SK-SB-114
	Sample ID	1025032	1025033	1025033	1025034	1025037	1025038	1025039
	Sample Date	01/20/1997	01/20/1997	01/20/1997	01/20/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	15:37	15:45	15:45	15:59	09:50	09:55	10:10
	Sample Depth	6' - 8'	8' - 10'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0792-097	AEL97001082	97-0793-098	97-0794-099	97-0812-119	97-0813-120	97-0814-121
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg		<5.1					
Dichlorobenzene, 1,3-	µg/kg		<5.1					
Dichlorobenzene, 1,4-	µg/kg		<5.1					
Dichlorobromomethane	µg/kg		5.1					
Dichlorodifluoromethane	µg/kg		5.1					
Dichloroethane, 1,1-	µg/kg		<5.1					
Dichloroethane, 1,2-	µg/kg		5.1					
Dichloroethylene, 1,1-	µg/kg		5.1					
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg		5.1					
Dichloroethylene, 1,2-trans-	µg/kg		<5.1					
Dichloropropane, 1,2-	µg/kg		5.1					
Dichloropropylene, 1,3-cis-	µg/kg		<5.1					
Dichloropropylene, 1,3-trans-	µg/kg		<5.1					
Ethylbenzene	µg/kg		5.1					
Ethylbenzene (screening)	µg/kg	<16		<17	<17	<17 nc	<17 nc	<17
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg		<13					
Methyl Bromide	µg/kg		<5.1					
Methyl Chloride	µg/kg		<5.1					
Methyl Ethyl Ketone	µg/kg		<13					
Methyl-2-pentanone, 4-	µg/kg		<13					
Methyl-tert-butyl Ether	µg/kg		<5.1					
Methylene Chloride	µg/kg		<7.7					
Styrene	µg/kg		<5.1					
Tetrachloroethane, 1,1,1,2-	µg/kg		<5.1					
Tetrachloroethane, 1,1,2,2-	µg/kg		<5.1					
Tetrachloroethylene	µg/kg		<5.1					

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-115
	Sample ID	1025040	1025040	1025041	1025041	1025042	1025043	1025044
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	10:20	10:20	10:20	10:20	10:30	10:32	13:15
	Sample Depth	6' - 8'	6' - 8'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	AEL	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	AEL97001083	97-0815-122	AEL97001084	97-0816-123	97-0817-124	97-0818-125	97-0819-126
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/31/1997	01/22/1997	01/31/1997	01/22/1997	01/22/1997	01/22/1997	01/22/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-	01/29/1997		01/29/1997				
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-115
	Sample ID	1025040	1025040	1025041	1025041	1025042	1025043	1025044
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	10:20	10:20	10:20	10:20	10:30	10:32	13:15
	Sample Depth	6' - 8'	6' - 8'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	AEL	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	AEL97001083	97-0815-122	AEL97001084	97-0816-123	97-0817-124	97-0818-125	97-0819-126
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg	<40.6		<40.9				
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether,4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline,4-	µg/kg							
Chloronaphthalene,2-	µg/kg							
Chlorophenol,2-	µg/kg							
Chlorophenyl Phenyl Ether,4-	µg/kg							
Chrysene	µg/kg							
Cresol,2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-115
	Sample ID	1025040	1025040	1025041	1025041	1025042	1025043	1025044
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	10:20	10:20	10:20	10:20	10:30	10:32	13:15
	Sample Depth	6' - 8'	6' - 8'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	AEL	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	AEL97001083	97-0815-122	AEL97001084	97-0816-123	97-0817-124	97-0818-125	97-0819-126
Constituent	Units							
Cresol, 4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine, 3,3'-	µg/kg							
Dichlorophenol, 2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol, 2,4-	µg/kg							
Dinitro-o-cresol, 4,6-	µg/kg							
Dinitrophenol, 2,4-	µg/kg							
Dinitrotoluene, 2,4-	µg/kg							
Dinitrotoluene, 2,6-	µg/kg							
Diphenylhydrazine, 1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene, 2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline, 2-	µg/kg							
Nitroaniline, 3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-115
	Sample ID	1025040	1025040	1025041	1025041	1025042	1025043	1025044
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	10:20	10:20	10:20	10:20	10:30	10:32	13:15
	Sample Depth	6' - 8'	6' - 8'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	AEL	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	AEL97001083	97-0815-122	AEL97001084	97-0816-123	97-0817-124	97-0818-125	97-0819-126
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg	<36		<27				
Acrolein	µg/kg	<18		<14				
Acrylonitrile	µg/kg	<18		<14				
Benzene	µg/kg	<7.2		<5.4				
Benzene (screening)	µg/kg		<8		<8 nc	<8	<8	<8 nc
Bromobenzene	µg/kg	<7.2		<5.4				
Bromoform	µg/kg	<7.2		<5.4				
Carbon Disulfide	µg/kg	<7.2		<5.4				
Carbon Tetrachloride	µg/kg	<7.2		<5.4				
Chlorobenzene	µg/kg	<7.2		<5.4				
Chlorodibromomethane	µg/kg	<7.2		<5.4				
Chloroethane	µg/kg	<7.2		<5.4				
Chloroethyl Vinyl Ether,2-	µg/kg	<7.2		<5.4				
Chloroform	µg/kg	<7.2		<5.4				
Chlorotoluene,o-	µg/kg	<7.2		<5.4				
Chlorotoluene,p-	µg/kg	<7.2		<5.4				
Dibromomethane	µg/kg	<7.2		<5.4				

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-114	SK-SB-115
	Sample ID	1025040	1025040	1025041	1025041	1025042	1025043	1025044
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	10:20	10:20	10:20	10:20	10:30	10:32	13:15
	Sample Depth	6' - 8'	6' - 8'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	0' - 2'
	Laboratory	AEL	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	AEL97001083	97-0815-122	AEL97001084	97-0816-123	97-0817-124	97-0818-125	97-0819-126
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg	<7.2		5.4				
Dichlorobenzene, 1,3-	µg/kg	<7.2		5.4				
Dichlorobenzene, 1,4-	µg/kg	<7.2		5.4				
Dichlorobromomethane	µg/kg	<7.2		<5.4				
Dichlorodifluoromethane	µg/kg	<7.2		<5.4				
Dichloroethane, 1,1-	µg/kg	<7.2		<5.4				
Dichloroethane, 1,2-	µg/kg	<7.2		<5.4				
Dichloroethylene, 1,1-	µg/kg	<7.2		<5.4				
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg	<7.2		<5.4				
Dichloroethylene, 1,2-trans-	µg/kg	<7.2		<5.4				
Dichloropropane, 1,2-	µg/kg	<7.2		<5.4				
Dichloropropylene, 1,3-cis-	µg/kg	<7.2		<5.4				
Dichloropropylene, 1,3-trans-	µg/kg	<7.2		<5.4				
Ethylbenzene	µg/kg	<7.2		<5.4				
Ethylbenzene (screening)	µg/kg		<17		<17 nc	<17	<17	<17 nc
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg	<18		<14				
Methyl Bromide	µg/kg	<7.2		<5.4				
Methyl Chloride	µg/kg	<7.2		<5.4				
Methyl Ethyl Ketone	µg/kg	<18		<14				
Methyl-2-pentanone, 4-	µg/kg	<18		<14				
Methyl-tert-butyl Ether	µg/kg	<7.2		<5.4				
Methylene Chloride	µg/kg	<7.2		<5.4				
Styrene	µg/kg	<7.2		<5.4				
Tetrachloroethane, 1,1,1,2-	µg/kg	<7.2		<5.4				
Tetrachloroethane, 1,1,2,2-	µg/kg	<7.2		<5.4				
Tetrachloroethylene	µg/kg	<7.2		<5.4				

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-116	SK-SB-116
	Sample ID	1025045	1025046	1025047	1025048	1025049	1025050	1025051
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	13:17	13:25	13:30	13:35	13:37	15:00	15:10
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0820-127	97-0821-128	97-0834-141	97-0835-142	97-0829-136	97-0822-129	97-0823-130
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/22/1997	01/22/1997	01/22/1997	01/22/1997	01/22/1997	01/22/1997	01/22/1997
Date PCBs Analyzed	-							
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-116	SK-SB-116
	Sample ID	1025045	1025046	1025047	1025048	1025049	1025050	1025051
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	13:17	13:25	13:30	13:35	13:37	15:00	15:10
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0820-127	97-0821-128	97-0834-141	97-0835-142	97-0829-136	97-0822-129	97-0823-130
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg							
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether, 4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							
Chlorophenol, 2-	µg/kg							
Chlorophenyl Phenyl Ether, 4-	µg/kg							
Chrysene	µg/kg							
Cresol, 2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-116	SK-SB-116
	Sample ID	1025045	1025046	1025047	1025048	1025049	1025050	1025051
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	13:17	13:25	13:30	13:35	13:37	15:00	15:10
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0820-127	97-0821-128	97-0834-141	97-0835-142	97-0829-136	97-0822-129	97-0823-130
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							
Dichlorophenol,2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol,2,4-	µg/kg							
Dinitro-o-cresol,4,6-	µg/kg							
Dinitrophenol,2,4-	µg/kg							
Dinitrotoluene,2,4-	µg/kg							
Dinitrotoluene,2,6-	µg/kg							
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-116	SK-SB-116
	Sample ID	1025045	1025046	1025047	1025048	1025049	1025050	1025051
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	13:17	13:25	13:30	13:35	13:37	15:00	15:10
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0820-127	97-0821-128	97-0834-141	97-0835-142	97-0829-136	97-0822-129	97-0823-130
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg							
Acrolein	µg/kg							
Acrylonitrile	µg/kg							
Benzene	µg/kg							
Benzene (screening)	µg/kg	<8	<8 nc	581 E nc	707 E	<8 nc	<8	<8
Bromobenzene	µg/kg							
Bromoform	µg/kg							
Carbon Disulfide	µg/kg							
Carbon Tetrachloride	µg/kg							
Chlorobenzene	µg/kg							
Chlorodibromomethane	µg/kg							
Chloroethane	µg/kg							
Chloroethyl Vinyl Ether,2-	µg/kg							
Chloroform	µg/kg							
Chlorotoluene,o-	µg/kg							
Chlorotoluene,p-	µg/kg							
Dibromomethane	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-115	SK-SB-116	SK-SB-116
	Sample ID	1025045	1025046	1025047	1025048	1025049	1025050	1025051
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997	01/21/1997
	Sample Time	13:17	13:25	13:30	13:35	13:37	15:00	15:10
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0820-127	97-0821-128	97-0834-141	97-0835-142	97-0829-136	97-0822-129	97-0823-130
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg							
Dichlorobenzene, 1,3-	µg/kg							
Dichlorobenzene, 1,4-	µg/kg							
Dichlorobromomethane	µg/kg							
Dichlorodifluoromethane	µg/kg							
Dichloroethane, 1,1-	µg/kg							
Dichloroethane, 1,2-	µg/kg							
Dichloroethylene, 1,1-	µg/kg							
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg							
Dichloroethylene, 1,2-trans-	µg/kg							
Dichloropropane, 1,2-	µg/kg							
Dichloropropylene, 1,3-cis-	µg/kg							
Dichloropropylene, 1,3-trans-	µg/kg							
Ethylbenzene	µg/kg							
Ethylbenzene (screening)	µg/kg	<17	<17 nc	<87 nc	<168	<17 nc	<17	<17
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg							
Methyl Bromide	µg/kg							
Methyl Chloride	µg/kg							
Methyl Ethyl Ketone	µg/kg							
Methyl-2-pentanone, 4-	µg/kg							
Methyl-tert-butyl Ether	µg/kg							
Methylene Chloride	µg/kg							
Styrene	µg/kg							
Tetrachloroethane, 1,1,1,2-	µg/kg							
Tetrachloroethane, 1,1,2,2-	µg/kg							
Tetrachloroethylene	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-86	SK-SB-86	SK-SB-86
	Sample ID	1025052	1025053	1025054	1025055	1018465	1018466	1018467
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	09/23/1996	09/23/1996	09/23/1996
	Sample Time	15:20	15:25	15:30	15:35	14:20	14:30	14:40
	Sample Depth	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0824-131	97-0826-133	97-0828-135	97-0825-132	96-4737-103	96-4738-104	96-4739-105
Constituent	Units							
Date Metals Analyzed	-							
Date Organics Analyzed	-	01/22/1997	01/22/1997	01/22/1997	01/22/1997	09/24/1996	09/24/1996	09/24/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-							
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg							
Barium	mg/kg							
Beryllium	mg/kg							
Cadmium	mg/kg							
Cadmium (TCLP)	mg/l							
Chromium	mg/kg							
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg							
Lead (TCLP)	mg/l							
Mercury	mg/kg							
Nickel	mg/kg							
Nickel (TCLP)	mg/l							
Selenium	mg/kg							
Silver	mg/kg							
Zinc	mg/kg							
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-86	SK-SB-86	SK-SB-86
	Sample ID	1025052	1025053	1025054	1025055	1018465	1018466	1018467
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	09/23/1996	09/23/1996	09/23/1996
	Sample Time	15:20	15:25	15:30	15:35	14:20	14:30	14:40
	Sample Depth	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0824-131	97-0826-133	97-0828-135	97-0825-132	96-4737-103	96-4738-104	96-4739-105
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg							
Hexachlorocyclopentadiene	µg/kg							
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg							
Acenaphthene	µg/kg							
Acenaphthylene	µg/kg							
Anthracene	µg/kg							
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg							
Benzo[a]pyrene	µg/kg							
Benzo[b]fluoranthene	µg/kg							
Benzo[ghi]perylene	µg/kg							
Benzo[k]fluoranthene	µg/kg							
Bis(2-chloroethoxy)methane	µg/kg							
Bis(2-chloroethyl) Ether	µg/kg							
Bis(2-ethylhexyl) Phthalate	µg/kg							
Bromophenyl Phenyl Ether, 4-	µg/kg							
Butyl Benzyl Phthalate	µg/kg							
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg							
Chlorophenol, 2-	µg/kg							
Chlorophenyl Phenyl Ether, 4-	µg/kg							
Chrysene	µg/kg							
Cresol, 2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-86	SK-SB-86	SK-SB-86
	Sample ID	1025052	1025053	1025054	1025055	1018465	1018466	1018467
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	09/23/1996	09/23/1996	09/23/1996
	Sample Time	15:20	15:25	15:30	15:35	14:20	14:30	14:40
	Sample Depth	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0824-131	97-0826-133	97-0828-135	97-0825-132	96-4737-103	96-4738-104	96-4739-105
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg							
Di-n-octyl Phthalate	µg/kg							
Dibenzo[a,h]anthracene	µg/kg							
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg							
Dichlorophenol,2,4-	µg/kg							
Diethyl Phthalate	µg/kg							
Dimethyl Phthalate	µg/kg							
Dimethylphenol,2,4-	µg/kg							
Dinitro-o-cresol,4,6-	µg/kg							
Dinitrophenol,2,4-	µg/kg							
Dinitrotoluene,2,4-	µg/kg							
Dinitrotoluene,2,6-	µg/kg							
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg							
Fluorene	µg/kg							
Hexachlorobutadiene	µg/kg							
Hexachloroethane	µg/kg							
Indeno(1,2,3-cd)pyrene	µg/kg							
Isophorone	µg/kg							
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg							
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg							
Naphthalene	µg/kg							
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-86	SK-SB-86	SK-SB-86
	Sample ID	1025052	1025053	1025054	1025055	1018465	1018466	1018467
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	09/23/1996	09/23/1996	09/23/1996
	Sample Time	15:20	15:25	15:30	15:35	14:20	14:30	14:40
	Sample Depth	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0824-131	97-0826-133	97-0828-135	97-0825-132	96-4737-103	96-4738-104	96-4739-105
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg							
Nitrophenol,2-	µg/kg							
Nitrophenol,4-	µg/kg							
Pentachlorophenol	µg/kg							
Phenanthrene	µg/kg							
Phenol	µg/kg							
Propane),2,2'-oxybis(2-chloro-	µg/kg							
Pyrene	µg/kg							
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg							
Acetone	µg/kg							
Acrolein	µg/kg							
Acrylonitrile	µg/kg							
Benzene	µg/kg							
Benzene (screening)	µg/kg	<8	8 nc	8 nc	<8	<8	<8 nc	<7
Bromobenzene	µg/kg							
Bromoform	µg/kg							
Carbon Disulfide	µg/kg							
Carbon Tetrachloride	µg/kg							
Chlorobenzene	µg/kg							
Chlorodibromomethane	µg/kg							
Chloroethane	µg/kg							
Chloroethyl Vinyl Ether,2-	µg/kg							
Chloroform	µg/kg							
Chlorotoluene,o-	µg/kg							
Chlorotoluene,p-	µg/kg							
Dibromomethane	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-116	SK-SB-86	SK-SB-86	SK-SB-86
	Sample ID	1025052	1025053	1025054	1025055	1018465	1018466	1018467
	Sample Date	01/21/1997	01/21/1997	01/21/1997	01/21/1997	09/23/1996	09/23/1996	09/23/1996
	Sample Time	15:20	15:25	15:30	15:35	14:20	14:30	14:40
	Sample Depth	4' - 6'	6' - 8'	8' - 10'	10' - 12'	0' - 2'	2' - 4'	4' - 6'
	Laboratory	LEA	LEA	LEA	LEA	LEA	LEA	LEA
	Lab. Number	97-0824-131	97-0826-133	97-0828-135	97-0825-132	96-4737-103	96-4738-104	96-4739-105
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg							
Dichlorobenzene, 1,3-	µg/kg							
Dichlorobenzene, 1,4-	µg/kg							
Dichlorobromomethane	µg/kg							
Dichlorodifluoromethane	µg/kg							
Dichloroethane, 1,1-	µg/kg							
Dichloroethane, 1,2-	µg/kg							
Dichloroethylene, 1,1-	µg/kg							
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg							
Dichloroethylene, 1,2-trans-	µg/kg							
Dichloropropane, 1,2-	µg/kg							
Dichloropropylene, 1,3-cis-	µg/kg							
Dichloropropylene, 1,3-trans-	µg/kg							
Ethylbenzene	µg/kg							
Ethylbenzene (screening)	µg/kg	<17	<17 nc	<17 nc	<17	<16	<17 nc	<15
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg							
Methyl Bromide	µg/kg							
Methyl Chloride	µg/kg							
Methyl Ethyl Ketone	µg/kg							
Methyl-2-pentanone, 4-	µg/kg							
Methyl-tert-butyl Ether	µg/kg							
Methylene Chloride	µg/kg							
Styrene	µg/kg							
Tetrachloroethane, 1,1,1,2-	µg/kg							
Tetrachloroethane, 1,1,2,2-	µg/kg							
Tetrachloroethylene	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-87
	Sample ID	1018468	1018469	1018470	1018471	1018471	1018472	1018457
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:50	15:00	15:10	15:20	15:20	15:30	13:00
	Sample Depth	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'
	Laboratory	AEL	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	AEL96010797	96-4741-107	96-4748-010	AEL96010798	96-4749-011	96-4756-018	96-4725-090
Constituent	Units							
Date Metals Analyzed	-	10/02/1996			10/02/1996			
Date Organics Analyzed	-	10/04/1996	09/24/1996	09/25/1996	10/04/1996	09/25/1996	09/25/1996	09/24/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-	10/07/1996			10/07/1996			
Date Semi-volatile Organics Analyzed	-	10/18/1996			10/18/1996			
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg	<1.17			10.5			
Barium	mg/kg	11.5			292			
Beryllium	mg/kg							
Cadmium	mg/kg	<3.52			7.89			
Cadmium (TCLP)	mg/l							
Chromium	mg/kg	<5.86			50.9			
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg	<23.5			<30.9			
Lead (TCLP)	mg/l							
Mercury	mg/kg	<0.235			<0.309			
Nickel	mg/kg	<11.7			42.1			
Nickel (TCLP)	mg/l							
Selenium	mg/kg	<1.17			<1.55			
Silver	mg/kg	<5.86			<7.73			
Zinc	mg/kg	21.6			128			
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-87
	Sample ID	1018468	1018469	1018470	1018471	1018471	1018472	1018457
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:50	15:00	15:10	15:20	15:20	15:30	13:00
	Sample Depth	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'
	Laboratory	AEL	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	AEL96010797	96-4741-107	96-4748-010	AEL96010798	96-4749-011	96-4756-018	96-4725-090
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg	<590			<490			
Hexachlorocyclopentadiene	µg/kg	<590			<490			
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg	80.4			<71.8			
Acenaphthene	µg/kg	<590			<490			
Acenaphthylene	µg/kg	<590			<490			
Anthracene	µg/kg	<590			<490			
Benzidine	µg/kg	<590			<490			
Benzo[a]anthracene	µg/kg	<590			<490			
Benzo[a]pyrene	µg/kg	<590			<490			
Benzo[b]fluoranthene	µg/kg	<590			<490			
Benzo[ghi]perylene	µg/kg	<590			<490			
Benzo[k]fluoranthene	µg/kg	<590			<490			
Bis(2-chloroethoxy)methane	µg/kg	<590			<490			
Bis(2-chloroethyl) Ether	µg/kg	<590			<490			
Bis(2-ethylhexyl) Phthalate	µg/kg	<590			<490			
Bromophenyl Phenyl Ether,4-	µg/kg	<590			<490			
Butyl Benzyl Phthalate	µg/kg	<590			<490			
Carbazole	µg/kg							
Chloroaniline,4-	µg/kg							
Chloronaphthalene,2-	µg/kg	<590			<490			
Chlorophenol,2-	µg/kg	<590			<490			
Chlorophenyl Phenyl Ether,4-	µg/kg	<590			<490			
Chrysene	µg/kg	<590			<490			
Cresol,2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-87
	Sample ID	1018468	1018469	1018470	1018471	1018471	1018472	1018457
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:50	15:00	15:10	15:20	15:20	15:30	13:00
	Sample Depth	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'
	Laboratory	AEL	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	AEL96010797	96-4741-107	96-4748-010	AEL96010798	96-4749-011	96-4756-018	96-4725-090
Constituent	Units							
Cresol,4-	µg/kg				<2000			
Di-n-butyl Phthalate	µg/kg	<2100						
Di-n-octyl Phthalate	µg/kg	<590			<490			
Dibenzo[a,h]anthracene	µg/kg	<590			<490			
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg	<590			<490			
Dichlorophenol,2,4-	µg/kg	<590			<490			
Diethyl Phthalate	µg/kg	<590			<490			
Dimethyl Phthalate	µg/kg	<590			<490			
Dimethylphenol,2,4-	µg/kg	<590			<490			
Dinitro-o-cresol,4,6-	µg/kg	<590			<490			
Dinitrophenol,2,4-	µg/kg	<590			<490			
Dinitrotoluene,2,4-	µg/kg	<590			<490			
Dinitrotoluene,2,6-	µg/kg	<590			<490			
Diphenylhydrazine,1,2-	µg/kg	<590			<490			
Fluoranthene	µg/kg	<590			<490			
Fluorene	µg/kg	<590			<490			
Hexachlorobutadiene	µg/kg	<590			<490			
Hexachloroethane	µg/kg	<590			<490			
Indeno(1,2,3-cd)pyrene	µg/kg	<590			<490			
Isophorone	µg/kg	<590			<490			
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg	<590			<490			
N-nitrosodimethylamine	µg/kg	<590			<490			
N-nitrosodiphenylamine	µg/kg	<590			<490			
Naphthalene	µg/kg	<590			<490			
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

Notes: L. Printed on 11/16/98

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-87
	Sample ID	1018468	1018469	1018470	1018471	1018471	1018472	1018457
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:50	15:00	15:10	15:20	15:20	15:30	13:00
	Sample Depth	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'
	Laboratory	AEL	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	AEL96010797	96-4741-107	96-4748-010	AEL96010798	96-4749-011	96-4756-018	96-4725-090
Constituent	Units							
Nitroaniline,4-	µg/kg				<490			
Nitrobenzene	µg/kg	<590			<490			
Nitrophenol,2-	µg/kg	<590			<490			
Nitrophenol,4-	µg/kg	<590			<490			
Pentachlorophenol	µg/kg	<590			<490			
Phenanthrene	µg/kg	<590			<490			
Phenol	µg/kg	<590			<490			
Propane,2,2'-oxybis(2-chloro-	µg/kg	<590			<490			
Pyrene	µg/kg	<590			<490			
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg	<590			<490			
Acetone	µg/kg	<69 UJ4			<49			
Acrolein	µg/kg	<55 UJ4			<24			
Acrylonitrile	µg/kg	<55 UJ4			<24			
Benzene	µg/kg	<28 UJ4			<9.7			
Benzene (screening)	µg/kg		<8	<8		<8	<8 nc	<8 nc
Bromobenzene	µg/kg	<28 UJ4			<9.7			
Bromoform	µg/kg	<28 UJ4			<9.7			
Carbon Disulfide	µg/kg	<28 UJ4			<9.7			
Carbon Tetrachloride	µg/kg	<28 UJ4			<9.7			
Chlorobenzene	µg/kg	<28 UJ4			<9.7			
Chlorodibromomethane	µg/kg	<28 UJ4			<9.7			
Chloroethane	µg/kg	<28 UJ4			<9.7			
Chloroethyl Vinyl Ether,2-	µg/kg	<28 UJ4			<9.7			
Chloroform	µg/kg	<28 UJ4			<9.7			
Chlorotoluene,o-	µg/kg	<28 UJ4			<9.7			
Chlorotoluene,p-	µg/kg	<28 UJ4			<9.7			
Dibromomethane	µg/kg	<28 UJ4			<9.7			

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-86	SK-SB-87
	Sample ID	1018468	1018469	1018470	1018471	1018471	1018472	1018457
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:50	15:00	15:10	15:20	15:20	15:30	13:00
	Sample Depth	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'
	Laboratory	AEL	LEA	LEA	AEL	LEA	LEA	LEA
	Lab. Number	AEL96010797	96-4741-107	96-4748-010	AEL96010798	96-4749-011	96-4756-018	96-4725-090
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg	<28 UJ4			<9.7			
Dichlorobenzene, 1,3-	µg/kg	<28 UJ4			<9.7			
Dichlorobenzene, 1,4-	µg/kg	<28 UJ4			<9.7			
Dichlorobromomethane	µg/kg	<28 UJ4			<9.7			
Dichlorodifluoromethane	µg/kg	<28 UJ4			<9.7			
Dichloroethane, 1,1-	µg/kg	<28 UJ4			<9.7			
Dichloroethane, 1,2-	µg/kg	<28 UJ4			<9.7			
Dichloroethylene, 1,1-	µg/kg	<28 UJ4			<9.7			
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg	<28 UJ4			<9.7			
Dichloroethylene, 1,2-trans-	µg/kg	<28 UJ4			<9.7			
Dichloropropane, 1,2-	µg/kg	<28 UJ4			<9.7			
Dichloropropylene, 1,3-cis-	µg/kg	<28 UJ4			<9.7			
Dichloropropylene, 1,3-trans-	µg/kg	<28 UJ4			<9.7			
Ethylbenzene	µg/kg	<28 UJ4			<9.7			
Ethylbenzene (screening)	µg/kg		<17	<16		<17	<18 nc	<17 nc
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg	<55 UJ4			<24			
Methyl Bromide	µg/kg	<28 UJ4			<9.7			
Methyl Chloride	µg/kg	<28 UJ4			<9.7			
Methyl Ethyl Ketone	µg/kg	<55 UJ4			<24			
Methyl-2-pentanone, 4-	µg/kg	<55 UJ4			<24			
Methyl-tert-butyl Ether	µg/kg	<28 UJ4			<9.7			
Methylene Chloride	µg/kg	<28 UJ4			<17			
Styrene	µg/kg	<28 UJ4			<9.7			
Tetrachloroethane, 1,1,1,2-	µg/kg	<28 UJ4			<9.7			
Tetrachloroethane, 1,1,2,2-	µg/kg	<28 UJ4			<9.7			
Tetrachloroethylene	µg/kg	<28 UJ4			<9.7			

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87
	Sample ID	1018458	1018459	1018460	1018461	1018462	1018463	1018463
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	13:10	13:20	13:30	13:40	13:50	14:00	14:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4726-091	96-4727-092	AEL96010795	96-4730-095	96-4731-096	AEL96010796	96-4732-097
Constituent	Units							
Date Metals Analyzed	-			10/02/1996			10/02/1996	
Date Organics Analyzed	-	09/24/1996	09/24/1996	10/04/1996	09/24/1996	09/24/1996	10/07/1996	09/24/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-			10/07/1996			10/07/1996	
Date Semi-volatile Organics Analyzed	-			10/18/1996			10/18/1996	
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg			1.29			7.57	
Barium	mg/kg			15.3			246	
Beryllium	mg/kg							
Cadmium	mg/kg			<3.62			5.6	
Cadmium (TCLP)	mg/l							
Chromium	mg/kg			6.51			46.6	
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg			<24.1			<28.7	
Lead (TCLP)	mg/l							
Mercury	mg/kg			<0.241			<0.287	
Nickel	mg/kg			<12.1			39.6	
Nickel (TCLP)	mg/l							
Selenium	mg/kg			<1.21			<1.44	
Silver	mg/kg			<6.03			<7.18	
Zinc	mg/kg			45.2			160	
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87
	Sample ID	1018458	1018459	1018460	1018461	1018462	1018463	1018463
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	13:10	13:20	13:30	13:40	13:50	14:00	14:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4726-091	96-4727-092	AEL96010795	96-4730-095	96-4731-096	AEL96010796	96-4732-097
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg			<810			<490	
Hexachlorocyclopentadiene	µg/kg			<810			<490	
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg			1610			<60.4	
Acenaphthene	µg/kg			810			<490	
Acenaphthylene	µg/kg			<810			<490	
Anthracene	µg/kg			810			<490	
Benzidine	µg/kg			810			<490	
Benzo[a]anthracene	µg/kg			810			<490	
Benzo[a]pyrene	µg/kg			810			<490	
Benzo[b]fluoranthene	µg/kg			<810			<490	
Benzo[ghi]perylene	µg/kg			<810			<490	
Benzo[k]fluoranthene	µg/kg			<810			<490	
Bis(2-chloroethoxy)methane	µg/kg			810			<490	
Bis(2-chloroethyl) Ether	µg/kg			<810			<490	
Bis(2-ethylhexyl) Phthalate	µg/kg			<810			<490	
Bromophenyl Phenyl Ether, 4-	µg/kg			<810			<490	
Butyl Benzyl Phthalate	µg/kg			<810			<490	
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg			<810			<490	
Chlorophenol, 2-	µg/kg			<810			<490	
Chlorophenyl Phenyl Ether, 4-	µg/kg			<810			<490	
Chrysene	µg/kg			<810			<490	
Cresol, 2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87
	Sample ID	1018458	1018459	1018460	1018461	1018462	1018463	1018463
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	13:10	13:20	13:30	13:40	13:50	14:00	14:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4726-091	96-4727-092	AEL96010795	96-4730-095	96-4731-096	AEL96010796	96-4732-097
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg			<1200			<1700	
Di-n-octyl Phthalate	µg/kg			<810			<490	
Dibenzo[a,h]anthracene	µg/kg			<810			<490	
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg			<810			<490	
Dichlorophenol,2,4-	µg/kg			<810			<490	
Diethyl Phthalate	µg/kg			<810			<490	
Dimethyl Phthalate	µg/kg			<810			<490	
Dimethylphenol,2,4-	µg/kg			<810			<490	
Dinitro-o-cresol,4,6-	µg/kg			<810			<490	
Dinitrophenol,2,4-	µg/kg			<810			<490	
Dinitrotoluene,2,4-	µg/kg			<810			<490	
Dinitrotoluene,2,6-	µg/kg			<810			<490	
Diphenylhydrazine,1,2-	µg/kg			<810			<490	
Fluoranthene	µg/kg			<810			<490	
Fluorene	µg/kg			<810 N1			<490	
Hexachlorobutadiene	µg/kg			<810			<490	
Hexachloroethane	µg/kg			<810			<490	
Indeno(1,2,3-cd)pyrene	µg/kg			<810			<490	
Isophorone	µg/kg			<810			<490	
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg			<810			<490	
N-nitrosodimethylamine	µg/kg			<810			<490	
N-nitrosodiphenylamine	µg/kg			<810			<490	
Naphthalene	µg/kg			17000			<490	
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87
	Sample ID	1018458	1018459	1018460	1018461	1018462	1018463	1018463
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	13:10	13:20	13:30	13:40	13:50	14:00	14:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4726-091	96-4727-092	AEL96010795	96-4730-095	96-4731-096	AEL96010796	96-4732-097
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg			<810			<490	
Nitrophenol,2-	µg/kg			<810			<490	
Nitrophenol,4-	µg/kg			<810			<490	
Pentachlorophenol	µg/kg			<810			<490	
Phenanthrene	µg/kg			<810 N1			<490	
Phenol	µg/kg			<810			<490	
Propane),2,2'-oxybis(2-chloro-	µg/kg			<810			<490	
Pyrene	µg/kg			<810			<490	
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg			<810			<490	
Acetone	µg/kg			<550 UJ4			<59	
Acrolein	µg/kg			<55 UJ4			<29	
Acrylonitrile	µg/kg			<55 UJ4			<29	
Benzene	µg/kg			<27 UJ4			<12	
Benzene (screening)	µg/kg	<7	<8		<31	<8		<8 nc
Bromobenzene	µg/kg			<27 UJ4			<12	
Bromoform	µg/kg			<27 UJ4			<12	
Carbon Disulfide	µg/kg			<27 UJ4			<12	
Carbon Tetrachloride	µg/kg			<27 UJ4			<12	
Chlorobenzene	µg/kg			<27 UJ4			<12	
Chlorodibromomethane	µg/kg			<27 UJ4			<12	
Chloroethane	µg/kg			<27 UJ4			<12	
Chloroethyl Vinyl Ether,2-	µg/kg			<27 UJ4			<12	
Chloroform	µg/kg			<27 UJ4			<12	
Chlorotoluene,o-	µg/kg			<27 UJ4			<12	
Chlorotoluene,p-	µg/kg			<27 UJ4			<12	
Dibromomethane	µg/kg			<27 UJ4			<12	

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87	SK-SB-87
	Sample ID	1018458	1018459	1018460	1018461	1018462	1018463	1018463
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	13:10	13:20	13:30	13:40	13:50	14:00	14:00
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4726-091	96-4727-092	AEL96010795	96-4730-095	96-4731-096	AEL96010796	96-4732-097
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg			<27 UJ4			<12	
Dichlorobenzene, 1,3-	µg/kg			<27 UJ4			<12	
Dichlorobenzene, 1,4-	µg/kg			<27 UJ4			<12	
Dichlorobromomethane	µg/kg			<27 UJ4			<12	
Dichlorodifluoromethane	µg/kg			<27 UJ4			<12	
Dichloroethane, 1,1-	µg/kg			<27 UJ4			<12	
Dichloroethane, 1,2-	µg/kg			<27 UJ4			<12	
Dichloroethylene, 1,1-	µg/kg			<27 UJ4			<12	
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg			<27 UJ4			<12	
Dichloroethylene, 1,2-trans-	µg/kg			<27 UJ4			<12	
Dichloropropane, 1,2-	µg/kg			<27 UJ4			<12	
Dichloropropylene, 1,3-cis-	µg/kg			<27 UJ4			<12	
Dichloropropylene, 1,3-trans-	µg/kg			<27 UJ4			<12	
Ethylbenzene	µg/kg			560 J11			<12	
Ethylbenzene (screening)	µg/kg	<15	<17		<66	<16		<17 nc
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg			<55 UJ4			<29	
Methyl Bromide	µg/kg			<27 UJ4			<12	
Methyl Chloride	µg/kg			<27 UJ4			<12	
Methyl Ethyl Ketone	µg/kg			<140 UJ4			<29	
Methyl-2-pentanone, 4-	µg/kg			<340 UJ4			<29	
Methyl-tert-butyl Ether	µg/kg			<27 UJ4			<12	
Methylene Chloride	µg/kg			<27 UJ4			<12	
Styrene	µg/kg			<27 UJ4			<12	
Tetrachloroethane, 1,1,1,2-	µg/kg			<27 UJ4			<12	
Tetrachloroethane, 1,1,2,2-	µg/kg			<27 UJ4			<12	
Tetrachloroethylene	µg/kg			<27 UJ4			<12	

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Table 3
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P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-87	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88
	Sample ID	1018464	1018448	1018449	1018449	1018450	1018451	1018452
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:10	10:20	10:35	10:35	10:50	11:00	11:15
	Sample Depth	14' - 15'	0' - 2'	2' - 4'	2' - 4'	4' - 6'	4' - 6'	6' - 8'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4733-098	96-4710-077	AEL96010793	96-4711-078	96-4712-079	96-4715-080	96-4719-084
Constituent	Units							
Date Metals Analyzed	-			10/02/1996				
Date Organics Analyzed	-	09/24/1996	09/24/1996	10/04/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-			10/07/1996				
Date Semi-volatile Organics Analyzed	-			10/18/1996				
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg			<1.02				
Barium	mg/kg			7.88				
Beryllium	mg/kg							
Cadmium	mg/kg			<3.07				
Cadmium (TCLP)	mg/l							
Chromium	mg/kg			5.83				
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg			<20.5				
Lead (TCLP)	mg/l							
Mercury	mg/kg			<0.205				
Nickel	mg/kg			<10.2				
Nickel (TCLP)	mg/l							
Selenium	mg/kg			<1.02				
Silver	mg/kg			<5.11				
Zinc	mg/kg			12.1				
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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	Location ID	SK-SB-87	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88
	Sample ID	1018464	1018448	1018449	1018449	1018450	1018451	1018452
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:10	10:20	10:35	10:35	10:50	11:00	11:15
	Sample Depth	14' - 15'	0' - 2'	2' - 4'	2' - 4'	4' - 6'	4' - 6'	6' - 8'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4733-098	96-4710-077	AEL96010793	96-4711-078	96-4712-079	96-4715-080	96-4719-084
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg			<350				
Hexachlorocyclopentadiene	µg/kg			<350				
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg			48.4				
Acenaphthene	µg/kg			<350				
Acenaphthylene	µg/kg			<350				
Anthracene	µg/kg			<350				
Benzidine	µg/kg			350				
Benzo[a]anthracene	µg/kg			<350				
Benzo[a]pyrene	µg/kg			<350				
Benzo[h]fluoranthene	µg/kg			350				
Benzo[ghi]perylene	µg/kg			350				
Benzo[k]fluoranthene	µg/kg			<350				
Bis(2-chloroethoxy)methane	µg/kg			350				
Bis(2-chloroethyl) Ether	µg/kg			<350				
Bis(2-ethylhexyl) Phthalate	µg/kg			<350				
Bromophenyl Phenyl Ether, 4-	µg/kg			<350				
Butyl Benzyl Phthalate	µg/kg			530				
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg			<350				
Chlorophenol, 2-	µg/kg			<350				
Chlorophenyl Phenyl Ether, 4-	µg/kg			<350				
Chrysene	µg/kg			<350				
Cresol, 2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-87	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88
	Sample ID	1018464	1018448	1018449	1018449	1018450	1018451	1018452
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:10	10:20	10:35	10:35	10:50	11:00	11:15
	Sample Depth	14' - 15'	0' - 2'	2' - 4'	2' - 4'	4' - 6'	4' - 6'	6' - 8'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4733-098	96-4710-077	AEL96010793	96-4711-078	96-4712-079	96-4715-080	96-4719-084
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg			<710				
Di-n-octyl Phthalate	µg/kg			<350				
Dibenzo[a,h]anthracene	µg/kg			<350				
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg			<350				
Dichlorophenol,2,4-	µg/kg			<350				
Diethyl Phthalate	µg/kg			350				
Dimethyl Phthalate	µg/kg			<350				
Dimethylphenol,2,4-	µg/kg			<350				
Dinitro-o-cresol,4,6-	µg/kg			350				
Dinitrophenol,2,4-	µg/kg			350				
Dinitrotoluene,2,4-	µg/kg			<350				
Dinitrotoluene,2,6-	µg/kg			<350				
Diphenylhydrazine,1,2-	µg/kg			<350				
Fluoranthene	µg/kg			<350				
Fluorene	µg/kg			<350				
Hexachlorobutadiene	µg/kg			<350				
Hexachloroethane	µg/kg			<350				
Indeno(1,2,3-cd)pyrene	µg/kg			<350				
Isophorone	µg/kg			<350				
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg			<350				
N-nitrosodimethylamine	µg/kg			<350				
N-nitrosodiphenylamine	µg/kg			<350				
Naphthalene	µg/kg			<350				
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-87	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88
	Sample ID	1018464	1018448	1018449	1018449	1018450	1018451	1018452
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:10	10:20	10:35	10:35	10:50	11:00	11:15
	Sample Depth	14' - 15'	0' - 2'	2' - 4'	2' - 4'	4' - 6'	4' - 6'	6' - 8'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4733-098	96-4710-077	AEL96010793	96-4711-078	96-4712-079	96-4715-080	96-4719-084
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg			<350				
Nitrophenol,2-	µg/kg			<350				
Nitrophenol,4-	µg/kg			<350				
Pentachlorophenol	µg/kg			<350				
Phenanthrene	µg/kg			<350				
Phenol	µg/kg			<350				
Propane),2,2'-oxybis(2-chloro-	µg/kg			<350				
Pyrene	µg/kg			<350				
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg			<350				
Acetone	µg/kg			<26				
Acrolein	µg/kg			<13				
Acrylonitrile	µg/kg			<13				
Benzene	µg/kg			<5.3				
Benzene (screening)	µg/kg	<8	<7		<8 nc	<7	<7	<7
Bromobenzene	µg/kg			5.3				
Bromoform	µg/kg			<5.3				
Carbon Disulfide	µg/kg			<5.3				
Carbon Tetrachloride	µg/kg			<5.3				
Chlorobenzene	µg/kg			5.3				
Chlorodibromomethane	µg/kg			5.3				
Chloroethane	µg/kg			5.3				
Chloroethyl Vinyl Ether,2-	µg/kg			<5.3				
Chloroform	µg/kg			<5.3				
Chlorotoluene,o-	µg/kg			<5.3				
Chlorotoluene,p-	µg/kg			<5.3				
Dibromomethane	µg/kg			<5.3				

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-87	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88
	Sample ID	1018464	1018448	1018449	1018449	1018450	1018451	1018452
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
	Sample Time	14:10	10:20	10:35	10:35	10:50	11:00	11:15
	Sample Depth	14' - 15'	0' - 2'	2' - 4'	2' - 4'	4' - 6'	4' - 6'	6' - 8'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4733-098	96-4710-077	AEL96010793	96-4711-078	96-4712-079	96-4715-080	96-4719-084
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg			<5.3				
Dichlorobenzene, 1,3-	µg/kg			<5.3				
Dichlorobenzene, 1,4-	µg/kg			<5.3				
Dichlorobromomethane	µg/kg			<5.3				
Dichlorodifluoromethane	µg/kg			<5.3				
Dichloroethane, 1,1-	µg/kg			<5.3				
Dichloroethane, 1,2-	µg/kg			<5.3				
Dichloroethylene, 1,1-	µg/kg			<5.3				
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg			<5.3				
Dichloroethylene, 1,2-trans-	µg/kg			<5.3				
Dichloropropane, 1,2-	µg/kg			5.3				
Dichloropropylene, 1,3-cis-	µg/kg			<5.3				
Dichloropropylene, 1,3-trans-	µg/kg			<5.3				
Ethylbenzene	µg/kg			<5.3				
Ethylbenzene (screening)	µg/kg	<17	<15		<17 nc	<16	<16	<16
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg			<13				
Methyl Bromide	µg/kg			<5.3				
Methyl Chloride	µg/kg			<5.3				
Methyl Ethyl Ketone	µg/kg			<13				
Methyl-2-pentanone, 4-	µg/kg			<13				
Methyl-tert-butyl Ether	µg/kg			<5.3				
Methylene Chloride	µg/kg			<5.3				
Styrene	µg/kg			<5.3				
Tetrachloroethane, 1,1,1,2-	µg/kg			<5.3				
Tetrachloroethane, 1,1,2,2-	µg/kg			<5.3				
Tetrachloroethylene	µg/kg			<5.3				

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	Location ID	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-89	SK-SB-89
	Sample ID	1018453	1018453	1018454	1018455	1018456	1018422	1018423
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/20/1996	09/20/1996
	Sample Time	11:25	11:25	11:35	11:45	11:55	12:10	12:20
	Sample Depth	8' - 10'	8' - 10'	10' - 12'	12' - 14'	14' - 15'	0' - 2'	2' - 4'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL96010794	96-4721-086	96-4722-087	96-4723-088	96-4724-089	96-4683-048	AEL96010787
Constituent	Units							
Date Metals Analyzed	-	10/02/1996						10/02/1996
Date Organics Analyzed	-	10/04/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/23/1996	10/04/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-	10/07/1996						10/07/1996
Date Semi-volatile Organics Analyzed	-	10/18/1996						10/16/1996
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg	<1.2						<1.06
Barium	mg/kg	16.9						9.95
Beryllium	mg/kg							
Cadmium	mg/kg	<3.59						<3.18
Cadmium (TCLP)	mg/l							
Chromium	mg/kg	6.7						6.78
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg	<23.9						<21.2
Lead (TCLP)	mg/l							
Mercury	mg/kg	<0.239						<0.212
Nickel	mg/kg	<12						<10.6
Nickel (TCLP)	mg/l							
Selenium	mg/kg	<1.2						<1.06
Silver	mg/kg	<6.22						<5.29
Zinc	mg/kg	25.1						10.4
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-89	SK-SB-89
	Sample ID	1018453	1018453	1018454	1018455	1018456	1018422	1018423
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/20/1996	09/20/1996
	Sample Time	11:25	11:25	11:35	11:45	11:55	12:10	12:20
	Sample Depth	8' - 10'	8' - 10'	10' - 12'	12' - 14'	14' - 15'	0' - 2'	2' - 4'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL96010794	96-4721-086	96-4722-087	96-4723-088	96-4724-089	96-4683-048	AEL96010787
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg	<410						<350
Hexachlorocyclopentadiene	µg/kg	<410						<350
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg	<40.9						<35.3
Acenaphthene	µg/kg	<410						<350
Acenaphthylene	µg/kg	<410						<350
Anthracene	µg/kg	<410						<350
Benzidine	µg/kg	<410						<350
Benzo[a]anthracene	µg/kg	<410						<350
Benzo[a]pyrene	µg/kg	<410						<350
Benzo[b]fluoranthene	µg/kg	<410						<350
Benzo[ghi]perylene	µg/kg	<410						<350
Benzo[k]fluoranthene	µg/kg	<410						<350
Bis(2-chloroethoxy)methane	µg/kg	<410						<350
Bis(2-chloroethyl) Ether	µg/kg	<410						<350
Bis(2-ethylhexyl) Phthalate	µg/kg	<410						<350
Bromophenyl Phenyl Ether, 4-	µg/kg	<410						<350
Butyl Benzyl Phthalate	µg/kg	<410						<350
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg	<410						<350
Chlorophenol, 2-	µg/kg	<410						<350
Chlorophenyl Phenyl Ether, 4-	µg/kg	<410						<350
Chrysene	µg/kg	<410						<350
Cresol, 2-	µg/kg							

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	Location ID	SK-SB-88	SK-S13-88	SK-SB-88	SK-S13-88	SK-SB-88	SK-SB-89	SK-SB-89
	Sample ID	1018453	1018453	1018454	1018455	1018456	1018422	1018423
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/20/1996	09/20/1996
	Sample Time	11:25	11:25	11:35	11:45	11:55	12:10	12:20
	Sample Depth	8' - 10'	8' - 10'	10' - 12'	12' - 14'	14' - 15'	0' - 2'	2' - 4'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL96010794	96-4721-086	96-4722-087	96-4723-088	96-4724-089	96-4683-048	AEL96010787
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg	<1200						<350
Di-n-octyl Phthalate	µg/kg	<410						<350
Dibenzo[a,h]anthracene	µg/kg	<410						<350
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg	<410						<350
Dichlorophenol,2,4-	µg/kg	<410						<350
Diethyl Phthalate	µg/kg	<410						<350
Dimethyl Phthalate	µg/kg	<410						<350
Dimethylphenol,2,4-	µg/kg	<410						<350
Dinitro-o-cresol,4,6-	µg/kg	<410						<350
Dinitrophenol,2,4-	µg/kg	<410						<350
Dinitrotoluene,2,4-	µg/kg	<410						<350
Dinitrotoluene,2,6-	µg/kg	<410						<350
Diphenylhydrazine,1,2-	µg/kg	<410						<350
Fluoranthene	µg/kg	<410						<350
Fluorene	µg/kg	<410						<350
Hexachlorobutadiene	µg/kg	<410						<350
Hexachloroethane	µg/kg	<410						<350
Indeno(1,2,3-cd)pyrene	µg/kg	<410						<350
Isophorone	µg/kg	<410						<350
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg	<410						<350
N-nitrosodimethylamine	µg/kg	<410						<350
N-nitrosodiphenylamine	µg/kg	<410						<350
Naphthalene	µg/kg	<410						<350
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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	Location ID	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-89	SK-SB-89
	Sample ID	1018453	1018453	1018454	1018455	1018456	1018422	1018423
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/20/1996	09/20/1996
	Sample Time	11:25	11:25	11:35	11:45	11:55	12:10	12:20
	Sample Depth	8' - 10'	8' - 10'	10' - 12'	12' - 14'	14' - 15'	0' - 2'	2' - 4'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL96010794	96-4721-086	96-4722-087	96-4723-088	96-4724-089	96-4683-048	AEL96010787
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg	<410						<350
Nitrophenol,2-	µg/kg	<410						<350
Nitrophenol,4-	µg/kg	<410						<350
Pentachlorophenol	µg/kg	<410						<350
Phenanthrene	µg/kg	<410						<350
Phenol	µg/kg	<410						<350
Propane),2,2'-oxybis(2-chloro-	µg/kg	<410						<350
Pyrene	µg/kg	<410						<350
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg	<410						<350
Acetone	µg/kg	<28						<24
Acrolein	µg/kg	<14						<12
Acrylonitrile	µg/kg	<14						<12
Benzene	µg/kg	<5.6						<4.8
Benzene (screening)	µg/kg		<8 nc	<7	<8	<8 nc	<7	
Bromobenzene	µg/kg	<5.6						<4.8
Bromoform	µg/kg	<5.6						<4.8
Carbon Disulfide	µg/kg	<5.6						<4.8
Carbon Tetrachloride	µg/kg	<5.6						<4.8
Chlorobenzene	µg/kg	<5.6						<4.8
Chlorodibromomethane	µg/kg	<5.6						<4.8
Chloroethane	µg/kg	<5.6						<4.8
Chloroethyl Vinyl Ether,2-	µg/kg	<5.6						<4.8
Chloroform	µg/kg	<5.6						<4.8
Chlorotoluene,o-	µg/kg	<5.6						<4.8
Chlorotoluene,p-	µg/kg	<5.6						<4.8
Dibromomethane	µg/kg	<5.6						<4.8

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	Location ID	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-88	SK-SB-89	SK-SB-89
	Sample ID	1018453	1018453	1018454	1018455	1018456	1018422	1018423
	Sample Date	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	09/20/1996	09/20/1996
	Sample Time	11:25	11:25	11:35	11:45	11:55	12:10	12:20
	Sample Depth	8' - 10'	8' - 10'	10' - 12'	12' - 14'	14' - 15'	0' - 2'	2' - 4'
	Laboratory	AEL	LEA	LEA	LEA	LEA	LEA	AEL
	Lab. Number	AEL96010794	96-4721-086	96-4722-087	96-4723-088	96-4724-089	96-4683-048	AEL96010787
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg	<5.6						<4.8
Dichlorobenzene, 1,3-	µg/kg	<5.6						<4.8
Dichlorobenzene, 1,4-	µg/kg	<5.6						<4.8
Dichlorobromomethane	µg/kg	<5.6						<4.8
Dichlorodifluoromethane	µg/kg	<5.6						<4.8
Dichloroethane, 1,1-	µg/kg	<5.6						<4.8
Dichloroethane, 1,2-	µg/kg	<5.6						<4.8
Dichloroethylene, 1,1-	µg/kg	<5.6						<4.8
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg	<5.6						<4.8
Dichloroethylene, 1,2-trans-	µg/kg	<5.6						<4.8
Dichloropropane, 1,2-	µg/kg	<5.6						<4.8
Dichloropropylene, 1,3-cis-	µg/kg	<5.6						<4.8
Dichloropropylene, 1,3-trans-	µg/kg	<5.6						<4.8
Ethylbenzene	µg/kg	<5.6						<4.8
Ethylbenzene (screening)	µg/kg		<17 nc	<16	<17	<17 nc	<15	
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg	<14						<12
Methyl Bromide	µg/kg	<5.6						<4.8
Methyl Chloride	µg/kg	<5.6						<4.8
Methyl Ethyl Ketone	µg/kg	<14						<12
Methyl-2-pentanone, 4-	µg/kg	<14						<12
Methyl-tert-butyl Ether	µg/kg	<5.6						<4.8
Methylene Chloride	µg/kg	<5.6						<6.0
Styrene	µg/kg	<5.6						<4.8
Tetrachloroethane, 1,1,1,2-	µg/kg	<5.6						<4.8
Tetrachloroethane, 1,1,2,2-	µg/kg	<5.6						<4.8
Tetrachloroethylene	µg/kg	<5.6						<4.8

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	Location ID	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89
	Sample ID	1018423	1018424	1018425	1018425	1018426	1018427	1018428
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	12:20	12:30	12:40	12:40	12:45	12:55	13:05
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4683-049	96-4684-050	AEL96010788	96-4685-051	96-4687-053	96-4688-054	96-4689-055
Constituent	Units							
Date Metals Analyzed	-			10/02/1996				
Date Organics Analyzed	-	09/23/1996	09/23/1996	10/04/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-			10/07/1996				
Date Semi-volatile Organics Analyzed	-			10/16/1996				
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg			<1.24				
Barium	mg/kg			9.78				
Beryllium	mg/kg							
Cadmium	mg/kg			<3.71				
Cadmium (TCLP)	mg/l							
Chromium	mg/kg			6.56				
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg			<24.8				
Lead (TCLP)	mg/l							
Mercury	mg/kg			<0.248				
Nickel	mg/kg			<12.4				
Nickel (TCLP)	mg/l							
Selenium	mg/kg			<1.24				
Silver	mg/kg			<6.19				
Zinc	mg/kg			11.9				
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89
	Sample ID	1018423	1018424	1018425	1018425	1018426	1018427	1018428
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	12:20	12:30	12:40	12:40	12:45	12:55	13:05
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4683-049	96-4684-050	AEL96010788	96-4685-051	96-4687-053	96-4688-054	96-4689-055
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg			<410				
Hexachlorocyclopentadiene	µg/kg			<410				
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg			<40.7				
Acenaphthene	µg/kg			<410				
Acenaphthylene	µg/kg			<410				
Anthracene	µg/kg			<410				
Benzidine	µg/kg			<410				
Benzo[a]anthracene	µg/kg			<410				
Benzo[a]pyrene	µg/kg			<410				
Benzo[b]fluoranthene	µg/kg			<410				
Benzo[ghi]perylene	µg/kg			<410				
Benzo[k]fluoranthene	µg/kg			<410				
Bis(2-chloroethoxy)methane	µg/kg			<410				
Bis(2-chloroethyl) Ether	µg/kg			<410				
Bis(2-ethylhexyl) Phthalate	µg/kg			<410				
Bromophenyl Phenyl Ether, 4-	µg/kg			<410				
Butyl Benzyl Phthalate	µg/kg			<610				
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg			<410				
Chlorophenol, 2-	µg/kg			<410				
Chlorophenyl Phenyl Ether, 4-	µg/kg			<410				
Chrysene	µg/kg			<410				
Cresol, 2-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89
	Sample ID	1018423	1018424	1018425	1018425	1018426	1018427	1018428
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	12:20	12:30	12:40	12:40	12:45	12:55	13:05
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4683-049	96-4684-050	AEL96010788	96-4685-051	96-4687-053	96-4688-054	96-4689-055
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg			<1600				
Di-n-octyl Phthalate	µg/kg			<410				
Dibenzo[a,h]anthracene	µg/kg			<410				
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg			<410				
Dichlorophenol,2,4-	µg/kg			<410				
Diethyl Phthalate	µg/kg			410				
Dimethyl Phthalate	µg/kg			<410				
Dimethylphenol,2,4-	µg/kg			<410				
Dinitro-o-cresol,4,6-	µg/kg			<410				
Dinitrophenol,2,4-	µg/kg			<410				
Dinitrotoluene,2,4-	µg/kg			<410				
Dinitrotoluene,2,6-	µg/kg			<410				
Diphenylhydrazine,1,2-	µg/kg			<410				
Fluoranthene	µg/kg			<410				
Fluorene	µg/kg			410				
Hexachlorobutadiene	µg/kg			<410				
Hexachloroethane	µg/kg			<410				
Indeno(1,2,3-cd)pyrene	µg/kg			<410				
Isophorone	µg/kg			<410				
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg			<410				
N-nitrosodimethylamine	µg/kg			<410				
N-nitrosodiphenylamine	µg/kg			<410				
Naphthalene	µg/kg			<410				
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89
	Sample ID	1018423	1018424	1018425	1018425	1018426	1018427	1018428
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	12:20	12:30	12:40	12:40	12:45	12:55	13:05
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4683-049	96-4684-050	AEL96010788	96-4685-051	96-4687-053	96-4688-054	96-4689-055
Constituent	Units							
Nitroaniline, 4-	µg/kg							
Nitrobenzene	µg/kg			<410				
Nitrophenol, 2-	µg/kg			<410				
Nitrophenol, 4-	µg/kg			<410				
Pentachlorophenol	µg/kg			<410				
Phenanthrene	µg/kg			<410				
Phenol	µg/kg			<410				
Propane), 2,2'-oxybis(2-chloro-	µg/kg			<410				
Pyrene	µg/kg			<410				
Trichlorophenol, 2,4,5-	µg/kg							
Trichlorophenol, 2,4,6-	µg/kg			<410				
Acetone	µg/kg			<29				
Acrolein	µg/kg			<15				
Acrylonitrile	µg/kg			<15				
Benzene	µg/kg			<5.8				
Benzene (screening)	µg/kg	<8	<7		<7	<7	<8	<8
Bromobenzene	µg/kg			<5.8				
Bromoform	µg/kg			<5.8				
Carbon Disulfide	µg/kg			<5.8				
Carbon Tetrachloride	µg/kg			<5.8				
Chlorobenzene	µg/kg			<5.8				
Chlorodibromomethane	µg/kg			<5.8				
Chloroethane	µg/kg			<5.8				
Chloroethyl Vinyl Ether, 2-	µg/kg			<5.8				
Chloroform	µg/kg			<5.8				
Chlorotoluene, o-	µg/kg			<5.8				
Chlorotoluene, p-	µg/kg			<5.8				
Dibromomethane	µg/kg			<5.8				

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89	SK-SB-89
	Sample ID	1018423	1018424	1018425	1018425	1018426	1018427	1018428
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	12:20	12:30	12:40	12:40	12:45	12:55	13:05
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	8' - 10'	10' - 12'	12' - 14'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4683-049	96-4684-050	AEL96010788	96-4685-051	96-4687-053	96-4688-054	96-4689-055
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg			<5.8				
Dichlorobenzene, 1,3-	µg/kg			<5.8				
Dichlorobenzene, 1,4-	µg/kg			<5.8				
Dichlorobromomethane	µg/kg			<5.8				
Dichlorodifluoromethane	µg/kg			<5.8				
Dichloroethane, 1,1-	µg/kg			<5.8				
Dichloroethane, 1,2-	µg/kg			<5.8				
Dichloroethylene, 1,1-	µg/kg			<5.8				
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg			<5.8				
Dichloroethylene, 1,2-trans-	µg/kg			<5.8				
Dichloropropane, 1,2-	µg/kg			<5.8				
Dichloropropylene, 1,3-cis-	µg/kg			<5.8				
Dichloropropylene, 1,3-trans-	µg/kg			<5.8				
Ethylbenzene	µg/kg			<5.8				
Ethylbenzene (screening)	µg/kg	<17	<15		<15	<16	<16	<16
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg			<15				
Methyl Bromide	µg/kg			<5.8				
Methyl Chloride	µg/kg			<5.8				
Methyl Ethyl Ketone	µg/kg			<15				
Methyl-2-pentanone, 4-	µg/kg			<15				
Methyl-tert-butyl Ether	µg/kg			<5.8				
Methylene Chloride	µg/kg			<8.7				
Styrene	µg/kg			<5.8				
Tetrachloroethane, 1,1,1,2-	µg/kg			<5.8				
Tetrachloroethane, 1,1,2,2-	µg/kg			<5.8				
Tetrachloroethylene	µg/kg			<5.8				

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	Location ID	SK-SB-89	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90
	Sample ID	1018429	1018475	1018475	1018476	1018477	1018478	1018479
	Sample Date	09/20/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996
	Sample Time	13:15	09:45	09:45	09:55	10:05	10:15	10:25
	Sample Depth	14' - 15'	0' - 2'	0' - 2'	2' - 4'	4' - 6'	6' - 8'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	96-4690-056	AEL96010865	96-4771-033	96-4772-034	96-4773-035	96-4774-036	96-4775-037
Constituent	Units							
Date Metals Analyzed	-		10/02/1996					
Date Organics Analyzed	-	09/23/1996	10/04/1996	09/25/1996	09/25/1996	09/25/1996	09/25/1996	09/25/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-		10/07/1996					
Date Semi-volatile Organics Analyzed	-		10/18/1996					
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg		4.61					
Barium	mg/kg		54					
Beryllium	mg/kg							
Cadmium	mg/kg		<3.42					
Cadmium (TCLP)	mg/l							
Chromium	mg/kg		9.68					
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg		<22.8					
Lead (TCLP)	mg/l							
Mercury	mg/kg		<0.228					
Nickel	mg/kg		<11.4					
Nickel (TCLP)	mg/l							
Selenium	mg/kg		<1.14					
Silver	mg/kg		<5.58					
Zinc	mg/kg		41.9					
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-89	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90
	Sample ID	1018429	1018475	1018475	1018476	1018477	1018478	1018479
	Sample Date	09/20/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996
	Sample Time	13:15	09:45	09:45	09:55	10:05	10:15	10:25
	Sample Depth	14' - 15'	0' - 2'	0' - 2'	2' - 4'	4' - 6'	6' - 8'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	96-4690-056	AEL96010865	96-4771-033	96-4772-034	96-4773-035	96-4774-036	96-4775-037
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg		<370					
Hexachlorocyclopentadiene	µg/kg		370					
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg		37.7					
Acenaphthene	µg/kg		370					
Acenaphthylene	µg/kg		<370					
Anthracene	µg/kg		<370					
Benzidine	µg/kg		<370					
Benzo[a]anthracene	µg/kg		<370					
Benzo[a]pyrene	µg/kg		<370					
Benzo[b]fluoranthene	µg/kg		<370					
Benzo[ghi]perylene	µg/kg		<370					
Benzo[k]fluoranthene	µg/kg		<370					
Bis(2-chloroethoxy)methane	µg/kg		<370					
Bis(2-chloroethyl) Ether	µg/kg		<370					
Bis(2-ethylhexyl) Phthalate	µg/kg		<370					
Bromophenyl Phenyl Ether, 4-	µg/kg		<370					
Butyl Benzyl Phthalate	µg/kg		<370					
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg		<370					
Chlorophenol, 2-	µg/kg		370					
Chlorophenyl Phenyl Ether, 4-	µg/kg		<370					
Chrysene	µg/kg		<370					
Cresol, 2-	µg/kg							

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Table 3
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	Location ID	SK-SB-89	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90
	Sample ID	1018429	1018475	1018475	1018476	1018477	1018478	1018479
	Sample Date	09/20/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996
	Sample Time	13:15	09:45	09:45	09:55	10:05	10:15	10:25
	Sample Depth	14' - 15'	0' - 2'	0' - 2'	2' - 4'	4' - 6'	6' - 8'	6' - 8'
	Laboratory	LEA	AEI	LEA	LEA	LEA	LEA	LEA
	Lab. Number	96-4690-056	AEI.96010865	96-4771-033	96-4772-034	96-4773-035	96-4774-036	96-4775-037
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg		<930					
Di-n-octyl Phthalate	µg/kg		<370					
Dibenzo[a,h]anthracene	µg/kg		<370					
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg		<370					
Dichlorophenol,2,4-	µg/kg		<370					
Diethyl Phthalate	µg/kg		<370					
Dimethyl Phthalate	µg/kg		<370					
Dimethylphenol,2,4-	µg/kg		<370					
Dinitro-o-cresol,4,6-	µg/kg		<370					
Dinitrophenol,2,4-	µg/kg		<370					
Dinitrotoluene,2,4-	µg/kg		<370					
Dinitrotoluene,2,6-	µg/kg		<370					
Diphenylhydrazine,1,2-	µg/kg		<370					
Fluoranthene	µg/kg		<370					
Fluorene	µg/kg		<370					
Hexachlorobutadiene	µg/kg		<370					
Hexachloroethane	µg/kg		<370					
Indeno(1,2,3-cd)pyrene	µg/kg		<370					
Isophorone	µg/kg		<370					
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg		<370					
N-nitrosodimethylamine	µg/kg		<370					
N-nitrosodiphenylamine	µg/kg		<370					
Naphthalene	µg/kg		<370					
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-89	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90
	Sample ID	1018429	1018475	1018475	1018476	1018477	1018478	1018479
	Sample Date	09/20/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996
	Sample Time	13:15	09:45	09:45	09:55	10:05	10:15	10:25
	Sample Depth	14' - 15'	0' - 2'	0' - 2'	2' - 4'	4' - 6'	6' - 8'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	96-4690-056	AEL96010865	96-4771-033	96-4772-034	96-4773-035	96-4774-036	96-4775-037
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg		<370					
Nitrophenol,2-	µg/kg		<370					
Nitrophenol,4-	µg/kg		<370					
Pentachlorophenol	µg/kg		<370					
Phenanthrene	µg/kg		<370					
Phenol	µg/kg		<370					
Propane),2,2'-oxybis(2-chloro-	µg/kg		<370					
Pyrene	µg/kg		<370					
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg		<370					
Acetone	µg/kg		28					
Acrolein	µg/kg		<14					
Acrylonitrile	µg/kg		14					
Benzene	µg/kg		5.6					
Benzene (screening)	µg/kg	<8		<8	<8	<7	<8	<7
Bromobenzene	µg/kg		<5.6					
Bromoform	µg/kg		<5.6					
Carbon Disulfide	µg/kg		<5.6					
Carbon Tetrachloride	µg/kg		<5.6					
Chlorobenzene	µg/kg		<5.6					
Chlorodibromomethane	µg/kg		<5.6					
Chloroethane	µg/kg		<5.6					
Chloroethyl Vinyl Ether,2-	µg/kg		<5.6					
Chloroform	µg/kg		<5.6					
Chlorotoluene,o-	µg/kg		<5.6					
Chlorotoluene,p-	µg/kg		<5.6					
Dibromomethane	µg/kg		<5.6					

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	Location ID	SK-SB-89	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90
	Sample ID	1018429	1018475	1018475	1018476	1018477	1018478	1018479
	Sample Date	09/20/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996
	Sample Time	13:15	09:45	09:45	09:55	10:05	10:15	10:25
	Sample Depth	14' - 15'	0' - 2'	0' - 2'	2' - 4'	4' - 6'	6' - 8'	6' - 8'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	LEA
	Lab. Number	96-4690-056	AEL96010865	96-4771-033	96-4772-034	96-4773-035	96-4774-036	96-4775-037
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg		<5.6					
Dichlorobenzene, 1,3-	µg/kg		<5.6					
Dichlorobenzene, 1,4-	µg/kg		<5.6					
Dichlorobromomethane	µg/kg		<5.6					
Dichlorodifluoromethane	µg/kg		<5.6					
Dichloroethane, 1,1-	µg/kg		<5.6					
Dichloroethane, 1,2-	µg/kg		5.6					
Dichloroethylene, 1,1-	µg/kg		5.6					
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg		5.6					
Dichloroethylene, 1,2-trans-	µg/kg		<5.6					
Dichloropropane, 1,2-	µg/kg		<5.6					
Dichloropropylene, 1,3-cis-	µg/kg		<5.6					
Dichloropropylene, 1,3-trans-	µg/kg		<5.6					
Ethylbenzene	µg/kg		<5.6					
Ethylbenzene (screening)	µg/kg	<17		<17	<16	<15	<16	<15
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg		<14					
Methyl Bromide	µg/kg		<5.6					
Methyl Chloride	µg/kg		<5.6					
Methyl Ethyl Ketone	µg/kg		<14					
Methyl-2-pentanone, 4-	µg/kg		<14					
Methyl-tert-butyl Ether	µg/kg		<5.6					
Methylene Chloride	µg/kg		<8.4					
Styrene	µg/kg		<5.6					
Tetrachloroethane, 1,1,1,2-	µg/kg		<5.6					
Tetrachloroethane, 1,1,2,2-	µg/kg		<5.6					
Tetrachloroethylene	µg/kg		<5.6					

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-91	SK-SB-91
	Sample ID	1018480	1018481	1018482	1018482	1018483	1018430	1018430
	Sample Date	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/20/1996	09/20/1996
	Sample Time	10:35	10:45	15:00	15:00	11:05	13:25	13:25
	Sample Depth	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'	0' - 2'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4776-038	96-4777-039	AEL96010866	96-4778-040	96-4779-041	AEL96010789	96-4691-057
Constituent	Units							
Date Metals Analyzed	-			10/02/1996			10/02/1996	
Date Organics Analyzed	-	09/25/1996	09/25/1996	10/08/1996	09/25/1996	09/25/1996	10/04/1996	09/23/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-			10/07/1996			10/07/1996	
Date Semi-volatile Organics Analyzed	-			10/18/1996			10/16/1996	
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg			11.8			2.54	
Barium	mg/kg			314			22.9	
Beryllium	mg/kg							
Cadmium	mg/kg			7.7			<3.3	
Cadmium (TCLP)	mg/l							
Chromium	mg/kg			54.1			11.4	
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg			<29.1			<22	
Lead (TCLP)	mg/l							
Mercury	mg/kg			<0.291			<0.22	
Nickel	mg/kg			46.2			<11	
Nickel (TCLP)	mg/l							
Selenium	mg/kg			<1.45			<1.1	
Silver	mg/kg			<7.27			<5.5	
Zinc	mg/kg			127			16.4	
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-91	SK-SB-91
	Sample ID	1018480	1018481	1018482	1018482	1018483	1018430	1018430
	Sample Date	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/20/1996	09/20/1996
	Sample Time	10:35	10:45	15:00	15:00	11:05	13:25	13:25
	Sample Depth	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'	0' - 2'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4776-038	96-4777-039	AEL96010866	96-4778-040	96-4779-041	AEL96010789	96-4691-057
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg			<500			<370	
Hexachlorocyclopentadiene	µg/kg			<500			<370	
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg			<65.9			<36.7	
Acenaphthene	µg/kg			<500			<370	
Acenaphthylene	µg/kg			<500			<370	
Anthracene	µg/kg			<500			<370	
Benzidine	µg/kg			<500			<370	
Benzo[a]anthracene	µg/kg			<500 N1			<370	
Benzo[a]pyrene	µg/kg			<500 N1			<370	
Benzo[b]fluoranthene	µg/kg			<500 N1			<370	
Benzo[ghi]perylene	µg/kg			<500 N1			<370	
Benzo[k]fluoranthene	µg/kg			<500 N1			<370	
Bis(2-chloroethoxy)methane	µg/kg			<500			<370	
Bis(2-chloroethyl) Ether	µg/kg			<500			<370	
Bis(2-ethylhexyl) Phthalate	µg/kg			<500			<370	
Bromophenyl Phenyl Ether,4-	µg/kg			<500			<370	
Butyl Benzyl Phthalate	µg/kg			<500			<560	
Carbazole	µg/kg							
Chloroaniline,4-	µg/kg							
Chloronaphthalene,2-	µg/kg			<500			<370	
Chlorophenol,2-	µg/kg			<500			<370	
Chlorophenyl Phenyl Ether,4-	µg/kg			<500			<370	
Chrysene	µg/kg			<500 N1			<370	
Cresol,2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-91	SK-SB-91
	Sample ID	1018480	1018481	1018482	1018482	1018483	1018430	1018430
	Sample Date	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/20/1996	09/20/1996
	Sample Time	10:35	10:45	15:00	15:00	11:05	13:25	13:25
	Sample Depth	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'	0' - 2'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4776-038	96-4777-039	AEL96010866	96-4778-040	96-4779-041	AEL96010789	96-4691-057
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg			1200			<1900	
Di-n-octyl Phthalate	µg/kg			<500			<370	
Dibenzo[a,h]anthracene	µg/kg			500			<370	
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg			<500			<370	
Dichlorophenol,2,4-	µg/kg			<500			<370	
Diethyl Phthalate	µg/kg			<500			<370	
Dimethyl Phthalate	µg/kg			<500			<370	
Dimethylphenol,2,4-	µg/kg			<500			<370	
Dinitro-o-cresol,4,6-	µg/kg			<500			<370	
Dinitrophenol,2,4-	µg/kg			<500			<370	
Dinitrotoluene,2,4-	µg/kg			<500			<370	
Dinitrotoluene,2,6-	µg/kg			<500			<370	
Diphenylhydrazine,1,2-	µg/kg			<500			<370	
Fluoranthene	µg/kg			<500 N1			<370 N1	
Fluorene	µg/kg			<500			<370	
Hexachlorobutadiene	µg/kg			<500			<370	
Hexachloroethane	µg/kg			<500			<370	
Indeno(1,2,3-cd)pyrene	µg/kg			<500 N1			<370	
Isophorone	µg/kg			<500			<370	
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg			<500			<370	
N-nitrosodimethylamine	µg/kg			500			<370	
N-nitrosodiphenylamine	µg/kg			500			<370	
Naphthalene	µg/kg			500			<370	
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-91	SK-SB-91
	Sample ID	1018480	1018481	1018482	1018482	1018483	1018430	1018430
	Sample Date	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/20/1996	09/20/1996
	Sample Time	10:35	10:45	15:00	15:00	11:05	13:25	13:25
	Sample Depth	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'	0' - 2'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4776-038	96-4777-039	AEL96010866	96-4778-040	96-4779-041	AEL96010789	96-4691-057
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg			<500			<370	
Nitrophenol,2-	µg/kg			<500			<370	
Nitrophenol,4-	µg/kg			<500			<370	
Pentachlorophenol	µg/kg			<500			<370	
Phenanthrene	µg/kg			<500 N1			<370	
Phenol	µg/kg			<500			<370	
Propane),2,2'-oxybis(2-chloro-	µg/kg			500			<370	
Pyrene	µg/kg			500 N1			<370 N1	
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg			500			<370	
Acetone	µg/kg			64			<28	
Acrolein	µg/kg			<32			<14	
Acrylonitrile	µg/kg			32			<14	
Benzene	µg/kg			13			<5.6	
Benzene (screening)	µg/kg	<8	<8		<8	<8		<8
Bromobenzene	µg/kg			13			<5.6	
Bromoform	µg/kg			<13			<5.6	
Carbon Disulfide	µg/kg			<13			<5.6	
Carbon Tetrachloride	µg/kg			<13			<5.6	
Chlorobenzene	µg/kg			<13			<5.6	
Chlorodibromomethane	µg/kg			<13			<5.6	
Chloroethane	µg/kg			<13			<5.6	
Chloroethyl Vinyl Ether,2-	µg/kg			<13			<5.6	
Chloroform	µg/kg			<13			<5.6	
Chlorotoluene,o-	µg/kg			<13			<5.6	
Chlorotoluene,p-	µg/kg			<13			<5.6	
Dibromomethane	µg/kg			<13			<5.6	

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-90	SK-SB-91	SK-SB-91
	Sample ID	1018480	1018481	1018482	1018482	1018483	1018430	1018430
	Sample Date	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/24/1996	09/20/1996	09/20/1996
	Sample Time	10:35	10:45	15:00	15:00	11:05	13:25	13:25
	Sample Depth	8' - 10'	10' - 12'	12' - 14'	12' - 14'	14' - 15'	0' - 2'	0' - 2'
	Laboratory	LEA	LEA	AEL	LEA	LEA	AEL	LEA
	Lab. Number	96-4776-038	96-4777-039	AEL96010866	96-4778-040	96-4779-041	AEL96010789	96-4691-057
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg			13			<5.6	
Dichlorobenzene, 1,3-	µg/kg			13			<5.6	
Dichlorobenzene, 1,4-	µg/kg			<13			<5.6	
Dichlorobromomethane	µg/kg			<13			<5.6	
Dichlorodifluoromethane	µg/kg			13			<5.6	
Dichloroethane, 1,1-	µg/kg			<13			<5.6	
Dichloroethane, 1,2-	µg/kg			13			<5.6	
Dichloroethylene, 1,1-	µg/kg			13			<5.6	
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg			13			<5.6	
Dichloroethylene, 1,2-trans-	µg/kg			<13			<5.6	
Dichloropropane, 1,2-	µg/kg			13			<5.6	
Dichloropropylene, 1,3-cis-	µg/kg			<13			<5.6	
Dichloropropylene, 1,3-trans-	µg/kg			<13			<5.6	
Ethylbenzene	µg/kg			<13			<5.6	
Ethylbenzene (screening)	µg/kg	<16	<16		<17	<17		<16
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg			<32			<14	
Methyl Bromide	µg/kg			<13			<5.6	
Methyl Chloride	µg/kg			<13			<5.6	
Methyl Ethyl Ketone	µg/kg			<32			<14	
Methyl-2-pentanone, 4-	µg/kg			<32			<14	
Methyl-tert-butyl Ether	µg/kg			<13			<5.6	
Methylene Chloride	µg/kg			<13			<6.9	
Styrene	µg/kg			<13			<5.6	
Tetrachloroethane, 1,1,1,2-	µg/kg			<13			<5.6	
Tetrachloroethane, 1,1,2,2-	µg/kg			<13			<5.6	
Tetrachloroethylene	µg/kg			13			<5.6	

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	Location ID	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91
	Sample ID	1018431	1018432	1018433	1018433	1018435	1018436	1018437
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	13:35	16:45	13:55	13:55	14:15	14:25	14:35
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	11' - 12'	12' - 14'	14' - 15'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4692-058	96-4693-060	AEL96010790	96-4694-061	96-4695-062	96-4696-063	96-4697-064
Constituent	Units							
Date Metals Analyzed	-			10/02/1996				
Date Organics Analyzed	-	09/23/1996	09/23/1996	10/04/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-			10/07/1996				
Date Semi-volatile Organics Analyzed	-			10/16/1996				
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg			<1.2				
Barium	mg/kg			16.9				
Beryllium	mg/kg							
Cadmium	mg/kg			<3.6				
Cadmium (TCLP)	mg/l							
Chromium	mg/kg			6.97				
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg			<24				
Lead (TCLP)	mg/l							
Mercury	mg/kg			<0.24				
Nickel	mg/kg			<12				
Nickel (TCLP)	mg/l							
Selenium	mg/kg			<1.2				
Silver	mg/kg			<6.01				
Zinc	mg/kg			12.5				
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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	Location ID	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91
	Sample ID	1018431	1018432	1018433	1018433	1018435	1018436	1018437
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	13:35	16:45	13:55	13:55	14:15	14:25	14:35
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	11' - 12'	12' - 14'	14' - 15'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4692-058	96-4693-060	AEL96010790	96-4694-061	96-4695-062	96-4696-063	96-4697-064
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg			<400				
Hexachlorocyclopentadiene	µg/kg			<400				
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg			40.4				
Acenaphthene	µg/kg			400				
Acenaphthylene	µg/kg			400				
Anthracene	µg/kg			400				
Benzidine	µg/kg			400				
Benzo[a]anthracene	µg/kg			<400				
Benzo[a]pyrene	µg/kg			<400				
Benzo[b]fluoranthene	µg/kg			<400				
Benzo[ghi]perylene	µg/kg			<400				
Benzo[k]fluoranthene	µg/kg			<400				
Bis(2-chloroethoxy)methane	µg/kg			<400				
Bis(2-chloroethyl) Ether	µg/kg			<400				
Bis(2-ethylhexyl) Phthalate	µg/kg			<400				
Bromophenyl Phenyl Ether, 4-	µg/kg			<400				
Butyl Benzyl Phthalate	µg/kg			<400				
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg			<400				
Chlorophenol, 2-	µg/kg			<400				
Chlorophenyl Phenyl Ether, 4-	µg/kg			<400				
Chrysene	µg/kg			400				
Cresol, 2-	µg/kg							

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	Location ID	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91
	Sample ID	1018431	1018432	1018433	1018433	1018435	1018436	1018437
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	13:35	16:45	13:55	13:55	14:15	14:25	14:35
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	11' - 12'	12' - 14'	14' - 15'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4692-058	96-4693-060	AEL96010790	96-4694-061	96-4695-062	96-4696-063	96-4697-064
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg			<1800				
Di-n-octyl Phthalate	µg/kg			<400				
Dibenzo[a,h]anthracene	µg/kg			<400				
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg			<400				
Dichlorophenol,2,4-	µg/kg			<400				
Diethyl Phthalate	µg/kg			<400				
Dimethyl Phthalate	µg/kg			<400				
Dimethylphenol,2,4-	µg/kg			<400				
Dinitro-o-cresol,4,6-	µg/kg			<400				
Dinitrophenol,2,4-	µg/kg			<400				
Dinitrotoluene,2,4-	µg/kg			<400				
Dinitrotoluene,2,6-	µg/kg			<400				
Diphenylhydrazine,1,2-	µg/kg			<400				
Fluoranthene	µg/kg			<400				
Fluorene	µg/kg			<400				
Hexachlorobutadiene	µg/kg			<400				
Hexachloroethane	µg/kg			<400				
Indeno(1,2,3-cd)pyrene	µg/kg			<400				
Isophorone	µg/kg			<400				
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg			<400				
N-nitrosodimethylamine	µg/kg			<400				
N-nitrosodiphenylamine	µg/kg			<400				
Naphthalene	µg/kg			<400				
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91
	Sample ID	1018431	1018432	1018433	1018433	1018435	1018436	1018437
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	13:35	16:45	13:55	13:55	14:15	14:25	14:35
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	11' - 12'	12' - 14'	14' - 15'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4692-058	96-4693-060	AEL96010790	96-4694-061	96-4695-062	96-4696-063	96-4697-064
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg			<400				
Nitrophenol,2-	µg/kg			<400				
Nitrophenol,4-	µg/kg			<400				
Pentachlorophenol	µg/kg			<400				
Phenanthrene	µg/kg			<400				
Phenol	µg/kg			<400				
Propane),2,2'-oxybis(2-chloro-	µg/kg			<400				
Pyrene	µg/kg			<400				
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg			<400				
Acetone	µg/kg			<27				
Acrolein	µg/kg			<13				
Acrylonitrile	µg/kg			<13				
Benzene	µg/kg			<5.4				
Benzene (screening)	µg/kg	<8 nc	<8		<8	<8	<8	<8 nc
Bromobenzene	µg/kg			<5.4				
Bromoform	µg/kg			<5.4				
Carbon Disulfide	µg/kg			<5.4				
Carbon Tetrachloride	µg/kg			<5.4				
Chlorobenzene	µg/kg			<5.4				
Chlorodibromomethane	µg/kg			<5.4				
Chloroethane	µg/kg			<5.4				
Chloroethyl Vinyl Ether,2-	µg/kg			<5.4				
Chloroform	µg/kg			<5.4				
Chlorotoluene,o-	µg/kg			<5.4				
Chlorotoluene,p-	µg/kg			<5.4				
Dibromomethane	µg/kg			<5.4				

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91	SK-SB-91
	Sample ID	1018431	1018432	1018433	1018433	1018435	1018436	1018437
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	13:35	16:45	13:55	13:55	14:15	14:25	14:35
	Sample Depth	2' - 4'	4' - 6'	6' - 8'	6' - 8'	11' - 12'	12' - 14'	14' - 15'
	Laboratory	LEA	LEA	AEL	LEA	LEA	LEA	LEA
	Lab. Number	96-4692-058	96-4693-060	AEL96010790	96-4694-061	96-4695-062	96-4696-063	96-4697-064
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg			<5.4				
Dichlorobenzene, 1,3-	µg/kg			<5.4				
Dichlorobenzene, 1,4-	µg/kg			<5.4				
Dichlorobromomethane	µg/kg			<5.4				
Dichlorodifluoromethane	µg/kg			<5.4				
Dichloroethane, 1,1-	µg/kg			<5.4				
Dichloroethane, 1,2-	µg/kg			<5.4				
Dichloroethylene, 1,1-	µg/kg			<5.4				
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg			<5.4				
Dichloroethylene, 1,2-trans-	µg/kg			<5.4				
Dichloropropane, 1,2-	µg/kg			5.4				
Dichloropropylene, 1,3-cis-	µg/kg			5.4				
Dichloropropylene, 1,3-trans-	µg/kg			5.4				
Ethylbenzene	µg/kg			<5.4				
Ethylbenzene (screening)	µg/kg	<17 nc	<17		<16	<16	<16	<17 nc
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg			<13				
Methyl Bromide	µg/kg			<5.4				
Methyl Chloride	µg/kg			<5.4				
Methyl Ethyl Ketone	µg/kg			<13				
Methyl-2-pentanone, 4-	µg/kg			<13				
Methyl-tert-butyl Ether	µg/kg			<5.4				
Methylene Chloride	µg/kg			<8.0				
Styrene	µg/kg			<5.4				
Tetrachloroethane, 1,1,1,2-	µg/kg			<5.4				
Tetrachloroethane, 1,1,2,2-	µg/kg			<5.4				
Tetrachloroethylene	µg/kg			<5.4				

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92
	Sample ID	1018438	1018439	1018439	1018440	1018441	1018442	1018443
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	14:50	15:00	15:00	15:10	15:20	15:30	15:40
	Sample Depth	0' - 2'	2' - 4'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	96-4698-065	AEL96010791	96-4699-066	96-4700-067	96-4701-068	96-4702-069	AEL96010792
Constituent	Units							
Date Metals Analyzed	-		10/02/1996					10/02/1996
Date Organics Analyzed	-	09/23/1996	10/04/1996	09/23/1996	09/23/1996	09/23/1996	09/23/1996	10/04/1996
Date PCBs Analyzed	-							
Date Physical Analyzed	-		10/07/1996					10/07/1996
Date Semi-volatile Organics Analyzed	-		10/16/1996					10/16/1996
Date of Metals TCLP Analysis	-							
Arsenic	mg/kg		<1.07					<1.27
Barium	mg/kg		11					36.7
Beryllium	mg/kg							
Cadmium	mg/kg		<3.2					<3.81
Cadmium (TCLP)	mg/l							
Chromium	mg/kg		6.94					8.37
Chromium (Total)	mg/kg							
Chromium (Total) (TCLP)	mg/l							
Lead	mg/kg		<21.3					<25.4
Lead (TCLP)	mg/l							
Mercury	mg/kg		<0.213					<0.254
Nickel	mg/kg		<10.7					<12.7
Nickel (TCLP)	mg/l							
Selenium	mg/kg		<1.07					<1.27
Silver	mg/kg		<5.34					<5.99
Zinc	mg/kg		11.4					19.5
PCB 1016	µg/kg							
PCB 1221	µg/kg							
PCB 1232	µg/kg							
PCB 1242	µg/kg							
PCB 1248	µg/kg							
PCB 1254	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92
	Sample ID	1018438	1018439	1018439	1018440	1018441	1018442	1018443
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	14:50	15:00	15:00	15:10	15:20	15:30	15:40
	Sample Depth	0' - 2'	2' - 4'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	96-4698-065	AEL96010791	96-4699-066	96-4700-067	96-4701-068	96-4702-069	AEL96010792
Constituent	Units							
PCB 1260	µg/kg							
Hexachlorobenzene	µg/kg		<350					<420
Hexachlorocyclopentadiene	µg/kg		<350					<420
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg		<34.7					<42.9
Acenaphthene	µg/kg		<350					<420
Acenaphthylene	µg/kg		<350					<420
Anthracene	µg/kg		<350					<420
Benzidine	µg/kg		<350					<420
Benzo[a]anthracene	µg/kg		<350					<420
Benzo[a]pyrene	µg/kg		<350					<420
Benzo[b]fluoranthene	µg/kg		<350					<420
Benzo[ghi]perylene	µg/kg		<350					<420
Benzo[k]fluoranthene	µg/kg		<350					<420
Bis(2-chloroethoxy)methane	µg/kg		<350					<420
Bis(2-chloroethyl) Ether	µg/kg		<350					<420
Bis(2-ethylhexyl) Phthalate	µg/kg		<350					<420
Bromophenyl Phenyl Ether, 4-	µg/kg		<350					<420
Butyl Benzyl Phthalate	µg/kg		<350					<420
Carbazole	µg/kg							
Chloroaniline, 4-	µg/kg							
Chloronaphthalene, 2-	µg/kg		<350					<420
Chlorophenol, 2-	µg/kg		<350					<420
Chlorophenyl Phenyl Ether, 4-	µg/kg		<350					<420
Chrysene	µg/kg		<350					<420
Cresol, 2-	µg/kg							

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92
	Sample ID	1018438	1018439	1018439	1018440	1018441	1018442	1018443
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	14:50	15:00	15:00	15:10	15:20	15:30	15:40
	Sample Depth	0' - 2'	2' - 4'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	96-4698-065	AEL96010791	96-4699-066	96-4700-067	96-4701-068	96-4702-069	AEL96010792
Constituent	Units							
Cresol,4-	µg/kg							
Di-n-butyl Phthalate	µg/kg		<1400					<1300
Di-n-octyl Phthalate	µg/kg		<350					<420
Dibenzo[a,h]anthracene	µg/kg		<350					<420
Dibenzofuran	µg/kg							
Dichlorobenzidine,3,3'-	µg/kg		<350					<420
Dichlorophenol,2,4-	µg/kg		<350					<420
Diethyl Phthalate	µg/kg		<350					<420
Dimethyl Phthalate	µg/kg		<350					<420
Dimethylphenol,2,4-	µg/kg		<350					<420
Dinitro-o-cresol,4,6-	µg/kg		<350					<420
Dinitrophenol,2,4-	µg/kg		<350					<420
Dinitrotoluene,2,4-	µg/kg		<350					<420
Dinitrotoluene,2,6-	µg/kg		<350					<420
Diphenylhydrazine,1,2-	µg/kg		<350					<420
Fluoranthene	µg/kg		<350					<420
Fluorene	µg/kg		<350					<420
Hexachlorobutadiene	µg/kg		<350					<420
Hexachloroethane	µg/kg		<350					<420
Indeno(1,2,3-cd)pyrene	µg/kg		<350					<420
Isophorone	µg/kg		<350					<420
Methylnaphthalene,2-	µg/kg							
N-nitroso-n-propylamine	µg/kg		<350					<420
N-nitrosodimethylamine	µg/kg		<350					<420
N-nitrosodiphenylamine	µg/kg		<350					<420
Naphthalene	µg/kg		<350					<420
Nitroaniline,2-	µg/kg							
Nitroaniline,3-	µg/kg							

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SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92
	Sample ID	1018438	1018439	1018439	1018440	1018441	1018442	1018443
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	14:50	15:00	15:00	15:10	15:20	15:30	15:40
	Sample Depth	0' - 2'	2' - 4'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	96-4698-065	AEL96010791	96-4699-066	96-4700-067	96-4701-068	96-4702-069	AEL96010792
Constituent	Units							
Nitroaniline,4-	µg/kg							
Nitrobenzene	µg/kg		<350					<420
Nitrophenol,2-	µg/kg		<350					<420
Nitrophenol,4-	µg/kg		<350					<420
Pentachlorophenol	µg/kg		<350					<420
Phenanthrene	µg/kg		<350					<420
Phenol	µg/kg		<350					<420
Propane,2,2'-oxybis(2-chloro-	µg/kg		<350					<420
Pyrene	µg/kg		<350					<420
Trichlorophenol,2,4,5-	µg/kg							
Trichlorophenol,2,4,6-	µg/kg		<350					<420
Acetone	µg/kg		<27					<37
Acrolein	µg/kg		<14					<13
Acrylonitrile	µg/kg		<14					<13
Benzene	µg/kg		<5.5					<5.3
Benzene (screening)	µg/kg	<8		<7	<8 nc	<8 nc	<8	
Bromobenzene	µg/kg		<5.5					<5.3
Bromoform	µg/kg		<5.5					<5.3
Carbon Disulfide	µg/kg		<5.5					<5.3
Carbon Tetrachloride	µg/kg		<5.5					<5.3
Chlorobenzene	µg/kg		<5.5					<5.3
Chlorodibromomethane	µg/kg		<5.5					<5.3
Chloroethane	µg/kg		<5.5					<5.3
Chloroethyl Vinyl Ether,2-	µg/kg		<5.5					<5.3
Chloroform	µg/kg		<5.5					<5.3
Chlorotoluene,o-	µg/kg		<5.5					<5.3
Chlorotoluene,p-	µg/kg		<5.5					<5.3
Dibromomethane	µg/kg		<5.5					<5.3

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92	SK-SB-92
	Sample ID	1018438	1018439	1018439	1018440	1018441	1018442	1018443
	Sample Date	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996	09/20/1996
	Sample Time	14:50	15:00	15:00	15:10	15:20	15:30	15:40
	Sample Depth	0' - 2'	2' - 4'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'
	Laboratory	LEA	AEL	LEA	LEA	LEA	LEA	AEL
	Lab. Number	96-4698-065	AEL96010791	96-4699-066	96-4700-067	96-4701-068	96-4702-069	AEL96010792
Constituent	Units							
Dichlorobenzene, 1,2-	µg/kg		<5.5					<5.3
Dichlorobenzene, 1,3-	µg/kg		5.5					<5.3
Dichlorobenzene, 1,4-	µg/kg		<5.5					<5.3
Dichlorobromomethane	µg/kg		<5.5					<5.3
Dichlorodifluoromethane	µg/kg		5.5					<5.3
Dichloroethane, 1,1-	µg/kg		<5.5					<5.3
Dichloroethane, 1,2-	µg/kg		<5.5					<5.3
Dichloroethylene, 1,1-	µg/kg		<5.5					<5.3
Dichloroethylene, 1,2-	µg/kg							
Dichloroethylene, 1,2-cis-	µg/kg		<5.5					<5.3
Dichloroethylene, 1,2-trans-	µg/kg		<5.5					<5.3
Dichloropropane, 1,2-	µg/kg		<5.5					<5.3
Dichloropropylene, 1,3-cis-	µg/kg		<5.5					<5.3
Dichloropropylene, 1,3-trans-	µg/kg		<5.5					<5.3
Ethylbenzene	µg/kg		<5.5					<5.3
Ethylbenzene (screening)	µg/kg	<16		<15	<18 nc	<18 nc	<16	
Ethylene Dibromide	µg/kg							
Hexanone, 2-	µg/kg		<14					<13
Methyl Bromide	µg/kg		<5.5					<5.3
Methyl Chloride	µg/kg		<5.5					<5.3
Methyl Ethyl Ketone	µg/kg		<14					<13
Methyl-2-pentanone, 4-	µg/kg		<14					<13
Methyl-tert-butyl Ether	µg/kg		<5.5					<5.3
Methylene Chloride	µg/kg		<5.5					<8.0
Styrene	µg/kg		<5.5					<5.3
Tetrachloroethane, 1,1,1,2-	µg/kg		<5.5					<5.3
Tetrachloroethane, 1,1,2,2-	µg/kg		<5.5					<5.3
Tetrachloroethylene	µg/kg		<5.5					<5.3

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SS-15	SK-SS-15	SK-SS-16	SK-SS-16
	Sample ID	1018443	1018444	1018445	02155052093	02155209393	02165052093	21655209393
	Sample Date	09/20/1996	09/20/1996	09/20/1996	05/20/1993	05/20/1993	05/20/1993	05/20/1993
	Sample Time	15:40	15:50	16:00				
	Sample Depth	10' - 12'	12' - 14'	14' - 15'				
	Laboratory	LEA	LEA	LEA	ENS	ENS	ENS	ENS
	Lab. Number	96-4703-070	96-4704-071	96-4705-072	0287990008SA	0290570017SA	0287990009SA	0290570018SA
Constituent	Units							
Date Metals Analyzed	-				06/07/1993		06/07/1993	
Date Organics Analyzed	-	09/23/1996	09/23/1996	09/23/1996	06/03/1993		06/03/1993	
Date PCBs Analyzed	-				06/08/1993		06/08/1993	
Date Physical Analyzed	-							
Date Semi-volatile Organics Analyzed	-				06/05/1993		06/03/1993	
Date of Metals TCLP Analysis	-					07/01/1993		07/01/1993
Arsenic	mg/kg				4.3		2.2	
Barium	mg/kg				47.3		24.4	
Beryllium	mg/kg				0.39		<0.21	
Cadmium	mg/kg				2.0		3.0	
Cadmium (TCLP)	mg/l					0.013		0.030
Chromium	mg/kg							
Chromium (Total)	mg/kg				23.7		8.3	
Chromium (Total) (TCLP)	mg/l					<0.010		<0.010
Lead	mg/kg				25.7		18.0	
Lead (TCLP)	mg/l					<0.050		<0.050
Mercury	mg/kg				<0.12		<0.10	
Nickel	mg/kg				5.9		5.8	
Nickel (TCLP)	mg/l					<0.040		<0.040
Selenium	mg/kg				<0.59		<0.52	
Silver	mg/kg				1.2		<1.0	
Zinc	mg/kg				407		32.4	
PCB 1016	µg/kg				<97		<8.7	
PCB 1221	µg/kg				<97		<8.7	
PCB 1232	µg/kg				<97		<8.7	
PCB 1242	µg/kg				<97		<8.7	
PCB 1248	µg/kg				<97		<8.7	
PCB 1254	µg/kg				<97		<8.7	

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SS-15	SK-SS-15	SK-SS-16	SK-SS-16
	Sample ID	1018443	1018444	1018445	02155052093	02155209393	02165052093	21655209393
	Sample Date	09/20/1996	09/20/1996	09/20/1996	05/20/1993	05/20/1993	05/20/1993	05/20/1993
	Sample Time	15:40	15:50	16:00				
	Sample Depth	10' - 12'	12' - 14'	14' - 15'				
	Laboratory	LEA	LEA	LEA	ENS	ENS	ENS	ENS
	Lab. Number	96-4703-070	96-4704-071	96-4705-072	0287990008SA	0290570017SA	0287990009SA	0290570018SA
Constituent	Units							
PCB 1260	µg/kg				<97		<8.7	
Hexachlorobenzene	µg/kg				<390		<350	
Hexachlorocyclopentadiene	µg/kg				<390		<350	
Corrosivity	SU							
Cyanide (Reactive)	mg/kg							
Sulfide (Reactive)	mg/kg							
Total Petroleum Hydrocarbons	mg/kg							
Acenaphthene	µg/kg				<390		<350	
Acenaphthylene	µg/kg				<390		<350	
Anthracene	µg/kg				<390		<350	
Benzidine	µg/kg							
Benzo[a]anthracene	µg/kg				<390		<350	
Benzo[a]pyrene	µg/kg				<390		<350	
Benzo[b]fluoranthene	µg/kg				390		<350	
Benzo[ghi]perylene	µg/kg				<390		<350	
Benzo[k]fluoranthene	µg/kg				390		<350	
Bis(2-chloroethoxy)methane	µg/kg				390		<350	
Bis(2-chloroethyl) Ether	µg/kg				390		<350	
Bis(2-ethylhexyl) Phthalate	µg/kg				<390		<350	
Bromophenyl Phenyl Ether,4-	µg/kg				<390		<350	
Butyl Benzyl Phthalate	µg/kg				390		<350	
Carbazole	µg/kg				<390		<350	
Chloroaniline,4-	µg/kg				<390		<350	
Chloronaphthalene,2-	µg/kg				<390		<350	
Chlorophenol,2-	µg/kg				<390		<350	
Chlorophenyl Phenyl Ether,4-	µg/kg				<390		<350	
Chrysene	µg/kg				<390		<350	
Cresol,2-	µg/kg				<390		<350	

Notes: 1. Printed on 11/16/98

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SS-15	SK-SS-15	SK-SS-16	SK-SS-16
	Sample ID	1018443	1018444	1018445	02155052093	02155209393	02165052093	21655209393
	Sample Date	09/20/1996	09/20/1996	09/20/1996	05/20/1993	05/20/1993	05/20/1993	05/20/1993
	Sample Time	15:40	15:50	16:00				
	Sample Depth	10' - 12'	12' - 14'	14' - 15'				
	Laboratory	LEA	LEA	LEA	ENS	ENS	ENS	ENS
	Lab. Number	96-4703-070	96-4704-071	96-4705-072	02879900088A	02905700178A	02879900098A	02905700188A
Constituent	Units							
Cresol,4-	µg/kg				<390		<350	
Di-n-butyl Phthalate	µg/kg				<390		<350	
Di-n-octyl Phthalate	µg/kg				<390		<350	
Dibenzo[a,h]anthracene	µg/kg				<390		<350	
Dibenzofuran	µg/kg				<390		<350	
Dichlorobenzidine,3,3'-	µg/kg				<780		<690	
Dichlorophenol,2,4-	µg/kg				<390		<350	
Diethyl Phthalate	µg/kg				<390		<350	
Dimethyl Phthalate	µg/kg				<390		<350	
Dimethylphenol,2,4-	µg/kg				<390		<350	
Dinitro-o-cresol,4,6-	µg/kg				<1900		<1700	
Dinitrophenol,2,4-	µg/kg				1900		<1700	
Dinitrotoluene,2,4-	µg/kg				390		<350	
Dinitrotoluene,2,6-	µg/kg				390		<350	
Diphenylhydrazine,1,2-	µg/kg							
Fluoranthene	µg/kg				<390		<350	
Fluorene	µg/kg				<390		<350	
Hexachlorobutadiene	µg/kg				<390		<350	
Hexachloroethane	µg/kg				<390		<350	
Indeno(1,2,3-cd)pyrene	µg/kg				<390		<350	
Isophorone	µg/kg				<390		<350	
Methylnaphthalene,2-	µg/kg				<390		<350	
N-nitroso-n-propylamine	µg/kg				<390		<350	
N-nitrosodimethylamine	µg/kg							
N-nitrosodiphenylamine	µg/kg				<390		<350	
Naphthalene	µg/kg				<390		<350	
Nitroaniline,2-	µg/kg				<1900		<1700	
Nitroaniline,3-	µg/kg				<1900		<1700	

Notes: 1. Printed on 11/16/98

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SS-15	SK-SS-15	SK-SS-16	SK-SS-16
	Sample ID	1018443	1018444	1018445	02155052093	02155209393	02165052093	21655209393
	Sample Date	09/20/1996	09/20/1996	09/20/1996	05/20/1993	05/20/1993	05/20/1993	05/20/1993
	Sample Time	15:40	15:50	16:00				
	Sample Depth	10' - 12'	12' - 14'	14' - 15'				
	Laboratory	LEA	LEA	LEA	ENS	ENS	ENS	ENS
	Lab. Number	96-4703-070	96-4704-071	96-4705-072	0287990008SA	0290570017SA	0287990009SA	0290570018SA
Constituent	Units							
Nitroaniline,4-	µg/kg				<1900		<1700	
Nitrobenzene	µg/kg				<390		<350	
Nitrophenol,2-	µg/kg				<390		<350	
Nitrophenol,4-	µg/kg				<1900		<1700	
Pentachlorophenol	µg/kg				1900		<1700	
Phenanthrene	µg/kg				<390		<350	
Phenol	µg/kg				<390		<350	
Propane),2,2'-oxybis(2-chloro-	µg/kg				390		<350	
Pyrene	µg/kg				390		<350	
Trichlorophenol,2,4,5-	µg/kg				<1900		<1700	
Trichlorophenol,2,4,6-	µg/kg				390		<350	
Acetone	µg/kg				12		<10	
Acrolein	µg/kg							
Acrylonitrile	µg/kg							
Benzene	µg/kg				<5.9		<5.2	
Benzene (screening)	µg/kg	<7	<8	<8 nc				
Bromobenzene	µg/kg							
Bromoform	µg/kg				<5.9		<5.2	
Carbon Disulfide	µg/kg				<5.9		<5.2	
Carbon Tetrachloride	µg/kg				<5.9		<5.2	
Chlorobenzene	µg/kg				<5.9		<5.2	
Chlorodibromomethane	µg/kg				<5.9		<5.2	
Chloroethane	µg/kg				<12		<10	
Chloroethyl Vinyl Ether,2-	µg/kg							
Chloroform	µg/kg				<5.9		<5.2	
Chlorotoluene,o-	µg/kg							
Chlorotoluene,p-	µg/kg				<390		<350	
Dibromomethane	µg/kg							

Notes: 1. Printed on 11/16/98

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Table 3
SUMMARY OF ANALYTICAL RESULTS - SOIL
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-92	SK-SB-92	SK-SB-92	SK-SS-15	SK-SS-15	SK-SS-16	SK-SS-16
	Sample ID	1018443	1018444	1018445	02155052093	02155209393	02165052093	21655209393
	Sample Date	09/20/1996	09/20/1996	09/20/1996	05/20/1993	05/20/1993	05/20/1993	05/20/1993
	Sample Time	15:40	15:50	16:00				
	Sample Depth	10' - 12'	12' - 14'	14' - 15'				
	Laboratory	LEA	LEA	LEA	ENS	ENS	ENS	ENS
	Lab. Number	96-4703-070	96-4704-071	96-4705-072	0287990008SA	0290570017SA	0287990009SA	0290570018SA
Constituent	Units							
Dichlorobenzene,1,2-	µg/kg				<390		<350	
Dichlorobenzene,1,3-	µg/kg				<390		<350	
Dichlorobenzene,1,4-	µg/kg				<390		<350	
Dichlorobromomethane	µg/kg				<5.9		<5.2	
Dichlorodifluoromethane	µg/kg							
Dichloroethane,1,1-	µg/kg				<5.9		<5.2	
Dichloroethane,1,2-	µg/kg				<5.9		<5.2	
Dichloroethylene,1,1-	µg/kg				<5.9		<5.2	
Dichloroethylene,1,2-	µg/kg				<5.9		<5.2	
Dichloroethylene,1,2-cis-	µg/kg							
Dichloroethylene,1,2-trans-	µg/kg							
Dichloropropane,1,2-	µg/kg				<5.9		<5.2	
Dichloropropylene,1,3-cis-	µg/kg				<5.9		<5.2	
Dichloropropylene,1,3-trans-	µg/kg				<5.9		<5.2	
Ethylbenzene	µg/kg				<5.9		<5.2	
Ethylbenzene (screening)	µg/kg	<15	<17	<17 nc				
Ethylene Dibromide	µg/kg							
Hexanone,2-	µg/kg				<12		<10	
Methyl Bromide	µg/kg				<12		<10	
Methyl Chloride	µg/kg				<12		<10	
Methyl Ethyl Ketone	µg/kg				<12		<10	
Methyl-2-pentanone,4-	µg/kg				<12		<10	
Methyl-tert-butyl Ether	µg/kg							
Methylene Chloride	µg/kg				<5.9		<5.2	
Styrene	µg/kg				<5.9		<5.2	
Tetrachloroethane,1,1,1,2-	µg/kg							
Tetrachloroethane,1,1,2,2-	µg/kg				<5.9		<5.2	
Tetrachloroethylene	µg/kg				<5.9		<5.2	

Notes: 1. Printed on 11/16/98

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Notes: 1. Only Detects Shown
2. Printed on 10/29/98

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-108	SK-SB-110
	Sample ID	02161052693	1018199	1634478	1647340	1024980	1024981	1024984
	Sample Date	05/26/1993	09/12/1996	06/04/1997	11/20/1997	01/22/1997	01/22/1997	01/22/1997
	Sample Time		17:05	09:10	11:20	13:50	14:20	16:00
	Sample Depth	4.50' - 9.50'	4.5' - 9.5'	4.5' - 9.5'	4.5' - 9.5'	10.0' - 12.0'	10.0' - 12.0'	10.0' - 12.0'
	Laboratory	ENS	AEL	QUAN	QUAN	AEL	AEL	AEL
	Lab. Number	0288560002SA	AEL96010292	A7F050147001	A7K240137003	AEL97000957	AEL97000958	AEL97000961
Constituent	Units							
Depth of Well	FT		10.90	10.90	10.91			
Depth to Water	FT		7.15	6.90	6.73			
Specific Conductivity (field)	µmhos		100	40	132			
Water Elevation	FT		38.13	38.38	38.55			
pH (field)	SU		6.60	6.25	6.4			
Date Metals Analyzed	-	06/09/1993	09/16/1996					
Date Organics Analyzed	-	06/04/1993	09/22/1996	06/16/1997	12/03/1997	01/30/1997	01/30/1997	01/31/1997
Date Physical Analyzed	-		09/24/1996	06/27/1997	12/10/1997	01/31/1997	01/31/1997	01/31/1997
Date Semi-volatile Organics Analyzed	-	06/08/1993		06/19/1997	12/06/1997	01/30/1997	01/30/1997	01/30/1997
Dinoseb	µg/L			10 U	10 U			
Arsenic	mg/L	<0.0050	0.004					
Barium	mg/L	<0.010	0.010					
Beryllium	mg/L	<0.0020						
Cadmium	mg/L	<0.0050	0.0010					
Chromium	mg/L		0.010					
Chromium (Total)	mg/L	<0.010						
Lead	mg/L	<0.0050	<0.0050					
Mercury	mg/L	<0.00020	<0.0004					
Nickel	mg/L	<0.040	<0.020					
Selenium	mg/L	<0.0050	<0.010					
Silver	mg/L	<0.010	<0.010					
Zinc	mg/L	<0.020	0.010					
Acetylaminofluorene, 2-	µg/L			<10 U	<10 U			
Aramite	µg/L			<10 U	<10 U			
Dibromo-3-chloropropane, 1,2-	µg/L			<5.0 U	<5.0 U			
Dimethoate	µg/L			<10 U	<10 U			
Disulfoton	µg/L			<10 U	<10 U			
Famphur	µg/L			20 U	<20 U			

Notes: 1. Printed on 10/29/98

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-108	SK-SB-110
	Sample ID	02161052693	1018199	1634478	1647340	1024980	1024981	1024984
	Sample Date	05/26/1993	09/12/1996	06/04/1997	11/20/1997	01/22/1997	01/22/1997	01/22/1997
	Sample Time		17:05	09:10	11:20	13:50	14:20	16:00
	Sample Depth	4.50' - 9.50'	4.5' - 9.5'	4.5' - 9.5'	4.5' - 9.5'	10.0' - 12.0'	10.0' - 12.0'	10.0' - 12.0'
	Laboratory	ENS	AEL	QUAN	QUAN	AEL	AEL	AEL
	Lab. Number	0288560002SA	AEL96010292	A7F050147001	A7K240137003	AEL97000957	AEL97000958	AEL97000961
Constituent	Units							
Hexachlorobenzene	µg/L	<10		<0.80 U	<0.80 U	<1.2 MDL	<2.4 MDL	<1.2 MDL
Hexachlorocyclopentadiene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Phorate	µg/L			<10 U	<10 U			
Total Petroleum Hydrocarbons	mg/L		1.0	<1.0 U	<1.0 U	<0.5	<0.5	<0.5
Acenaphthene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Acenaphthylene	µg/L	<10		<0.80 U	<0.80 U	<1.6 MDL	<3.1 MDL	<1.6 MDL
Acetophenone	µg/L			<10 U	<10 U			
Aminobiphenyl,4-	µg/L			<10 U	<10 U			
Aniline	µg/L			<10 U	<10 U			
Anthracene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Benzidine	µg/L					<10	<20	<10
Benzo[a]anthracene	µg/L	<10		<0.80 U	<0.80 U	<0.82 MDL	<1.64 MDL	<0.82 MDL
Benzo[a]pyrene	µg/L	<10		<0.70 U	<0.70 U	<0.37 MDL	<0.74 MDL	<0.37 MDL
Benzo[b]fluoranthene	µg/L	<10		<0.80 U	<0.80 U	<0.51 MDL	<1.01 MDL	<0.51 MDL
Benzo[ghi]perylene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Benzo[k]fluoranthene	µg/L	<10		<0.80 U	<0.80 U	<0.60 MDL	<1.21 MDL	<0.60 MDL
Benzyl Alcohol	µg/L			<20 U	<20 U			
Bis(2-chloroethoxy)methane	µg/L	<10		<10 U	<10 U	<10	<20	<10
Bis(2-chloroethyl) Ether	µg/L	<10		<10 U	<10 U	<10	<20	<10
Bis(2-ethylhexyl)phthalate	µg/L	<10		<7.0 U	<7.0 U	<2.0 U	<2.6 MDL	<1.3 MDL
Bromophenyl Phenyl Ether,4-	µg/L	<10		<10 U	<10 U	<10	<20	<10
Butyl Benzyl Phthalate	µg/L	<10		<10 U	<10 U	<10	<20	<10
Carbazole	µg/L			<10 U	<10 U			
Chloro-m-cresol,p-	µg/L			<20 U	<20 U			
Chloroaniline,4-	µg/L	<10		<20 U	<20 U			
Chloronaphthalene,2-	µg/L	<10		<10 U	<10 U	<10	<20	<10
Chlorophenol,2-	µg/L	<10		<10 U	<10 U	<10	<20	<10 UJ4
Chlorophenyl Phenyl Ether,4-	µg/L	<10		<10 U	<10 U	<10	<20	<10

Notes: 1. Printed on 10/29/98

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-108	SK-SB-110
	Sample ID	02161052693	1018199	1634478	1647340	1024980	1024981	1024984
	Sample Date	05/26/1993	09/12/1996	06/04/1997	11/20/1997	01/22/1997	01/22/1997	01/22/1997
	Sample Time		17:05	09:10	11:20	13:50	14:20	16:00
	Sample Depth	4.50' - 9.50'	4.5' - 9.5'	4.5' - 9.5'	4.5' - 9.5'	10.0' - 12.0'	10.0' - 12.0'	10.0' - 12.0'
	Laboratory	ENS	AEL	QUAN	QUAN	AEL	AEL	AEL
	Lab. Number	0288560002SA	AEL96010292	A7F050147001	A7K240137003	AEL97000957	AEL97000958	AEL97000961
Constituent	Units							
Chrysene	µg/l.	<10		<10 U	<10 U	<10	<20	<10
Cresol,2-	µg/L	<10		<10 U	<10 U			
Cresol,3-	µg/L			<10 U	<10 U			
Cresol,4-	µg/L	<10		<10 U	<10 U			
Di-n-butyl Phthalate	µg/L	<10		<10 U	<10 U	<10	<20	<10
Di-n-octyl Phthalate	µg/L	<10		<10 U	<10 U	<10	<20	<10
Dibenzo[a,h]anthracene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Dibenzofuran	µg/L	<10		<10 U	<10 U			
Dichloro-2-butylene,1,4-trans-	µg/L			<5.0 U	<5.0 U			
Dichlorobenzidine,3,3'-	µg/L	<20		<20 U	<20 U	<10	<20	<10
Dichlorophenol,2,4-	µg/L	<10		<10 U	<10 U	<10	<20	<10 UJ4
Diethyl Phthalate	µg/L	<10		<10 U	<10 U	<10	<20	<10
Dimethyl Phthalate	µg/L	<10		<10 U	<10 U	<10	<20	<10
Dimethylaminoazobenzene,4-	µg/L			<10 U	<10 U			
Dimethylbenzidine,3,3'-	µg/L			<10 U	<10 U			
Dimethylbenzo[a]anthracene,7,12-	µg/L			<10 U	<10 U			
Dimethylphenethylamine,alpha,alpha-	µg/L			<20 U J	<20 U			
Dimethylphenol,2,4-	µg/L	<10		<10 U	<10 U	<10	<20	<10 UJ4
Dinitro-o-cresol,4,6-	µg/L	<50		<50 U	<50 U	<10	<20	<10 UJ4
Dinitrobenzene,1,3-	µg/L			<10 U	<10 U			
Dinitrophenol,2,4-	µg/L	<50		<50 U	<50 U	<10	<20	<10 UJ4
Dinitrotoluene,2,4-	µg/L	<10		<10 U	<10 U	<10	<20	<10
Dinitrotoluene,2,6-	µg/L	<10		<10 U	<10 U	<10	<20	<10
Diphenylamine	µg/L			<10 U	<10 U			
Diphenylhydrazine,1,2-	µg/l.					<10	<20	<10
Ethyl Methanesulfonate	µg/l.			<10 U	<10 U			
Fluoranthene	µg/l.	<10		<10 U	<10 U	<10	<20	<10
Fluorene	µg/L	<10		<10 U	<10 U	<10	<20	<10

Notes: 1. Printed on 10/29/98

Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-108	SK-SB-110
	Sample ID	02161052693	1018199	1634478	1647340	1024980	1024981	1024984
	Sample Date	05/26/1993	09/12/1996	06/04/1997	11/20/1997	01/22/1997	01/22/1997	01/22/1997
	Sample Time		17:05	09:10	11:20	13:50	14:20	16:00
	Sample Depth	4.50' - 9.50'	4.5' - 9.5'	4.5' - 9.5'	4.5' - 9.5'	10.0' - 12.0'	10.0' - 12.0'	10.0' - 12.0'
	Laboratory	ENS	AEL	QUAN	QUAN	AEL	AEL	AEL
	Lab. Number	0288560002SA	AEL96010292	A7F050147001	A7K240137003	AEL97000957	AEL97000958	AEL97000961
Constituent	Units							
Hexachlorobutadiene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Hexachloroethane	µg/L	<10		<3.0 U	<3.0 U	<1.2 MDL	<2.5 MDL	<1.2 MDL
Hexachlorophene	µg/L			<10 U				
Hexachloropropylene	µg/L			<10 U	<10 U			
Indeno(1,2,3-cd)pyrene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Isophorone	µg/L	<10		<10 U	<10 U	<10	<20	<10
Isosafrole	µg/L			<10 U	<10 U			
Methapyrilene	µg/L			50 U	50 U			
Methyl Methanesulfonate	µg/L			<10 U	<10 U			
Methylcholanthrene,3-	µg/L			<10 U	<10 U			
Methylnaphthalene,2-	µg/L	<10		<10 U	<10 U			
N-nitroso-di-n-butylamine	µg/L			<10 U	<10 U			
N-nitroso-n-propylamine	µg/L	<10		<10 U	<10 U	<10	<20	<10
N-nitrosodiethylamine	µg/L			<10 U	<10 U			
N-nitrosodimethylamine	µg/L			<10 U	<10 U	<10	<20	<10
N-nitrosodiphenylamine	µg/L	<10		<10 U	<10 U	<10	<20	<10
N-nitrosomethylethylamine	µg/L			<10 U	<10 U			
N-nitrosomorpholine	µg/L			<10 U	<10 U			
N-nitrosopiperidine	µg/L			<10 U	<10 U			
Naphthalene	µg/L	<10		<10 U	<10 U	<10	<20	<10
Naphthoquinone,1,4-	µg/L			<50 U	<50 U			
Naphthylamine,alpha-	µg/L			<10 U	<10 U			
Naphthylamine,beta-	µg/L			<10 U	<10 U			
Nitro-o-toluidine,5-	µg/L			<10 U	<10 U			
Nitroaniline,2-	µg/L	<50		<50 U	<50 U			
Nitroaniline,3-	µg/L	<50		<50 U	<50 U			
Nitroaniline,4-	µg/L	<50		<50 U	<50 U			
Nitrobenzene	µg/L	<10		<10 U	<10 U	<10	<20	<10

Notes: 1. Printed on 10/29/98

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-108	SK-SB-110
	Sample ID	02161052693	1018199	1634478	1647340	1024980	1024981	1024984
	Sample Date	05/26/1993	09/12/1996	06/04/1997	11/20/1997	01/22/1997	01/22/1997	01/22/1997
	Sample Time		17:05	09:10	11:20	13:50	14:20	16:00
	Sample Depth	4.50' - 9.50'	4.5' - 9.5'	4.5' - 9.5'	4.5' - 9.5'	10.0' - 12.0'	10.0' - 12.0'	10.0' - 12.0'
	Laboratory	ENS	AEL	QUAN	QUAN	AEL	AEL	AEL
	Lab. Number	0288560002SA	AEL96010292	A7F050147001	A7K240137003	AEL97000957	AEL97000958	AEL97000961
Constituent	Units							
Nitrophenol,2-	µg/L	<10		<10 U	<10 U	<10	<20	<10 UJ4
Nitrophenol,4-	µg/L	<50		50 U	<50 U	<10	<20	<10 UJ4
Nitroquinoline-1-oxide,4-	µg/L			50 U	<50 U			
Nitrosopyrrolidine,n-	µg/L			10 U	<10 U			
Pentachlorophenol	µg/L	<50		2.0 U	<2.0 U	<0.63 MDL	<1.26 MDL	<0.63 UJ4MDL
Phenacetin	µg/L			<10 U	<10 U			
Phenanthrene	µg/L	<10		0.80 U	<0.80 U	<1.1 MDL	<2.1 MDL	<1.1 MDL
Phenol	µg/L	<10		10 U	<10 U	<10	<20	<10 UJ4
Phenylenediamine,1,4-	µg/L			<50 U	<50 U			
Picoline,2-	µg/L			10 U	<10 U			
Pronamide	µg/L			10 U	<10 U			
Propane),2,2'-oxybis(1-chloro-	µg/L			<10 U	<10 U			
Propane),2,2'-oxybis(2-chloro-	µg/L	<10				<10	<20	<10
Pyrene	µg/L	<10		10 U	<10 U	<10	<20	<10
Pyridine	µg/L			<10 U	<10 U			
Safrole	µg/L			<10 U	<10 U			
Tetrachlorobenzene,1,2,4,5-	µg/L			<10 U	<10 U			
Tetrachlorophenol,2,3,4,6-	µg/L			<10 U	<10 U			
Toluidine,o-	µg/L			<10 U	<10 U			
Trichlorophenol,2,4,5-	µg/L	<50		<10 U	<10 U			
Trichlorophenol,2,4,6-	µg/L	<10		<10 U	<10 U	<10	<20	<10 UJ4
Triethyl Phosphorothioate,o,o,o-	µg/L			<10 U	<10 U			
Trinitrobenzene,1,3,5-	µg/L				<10 U			
Acetone	µg/L		<4.0		<100 U	<8.0	<4.0	<15
Acrolein	µg/L		<15		<20 U	<15	<15	<15
Acrylonitrile	µg/L		<0.65		<20 U	<0.65	<0.65	<0.65
Allyl Chloride	µg/L			<100 U	<100 U			
Benzene	µg/L	<0.50	<1.0	<1.0 U	<1.0 U	<1.0	<1.0	<1.0

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-108	SK-SB-110
	Sample ID	02161052693	1018199	1634478	1647340	1024980	1024981	1024984
	Sample Date	05/26/1993	09/12/1996	06/04/1997	11/20/1997	01/22/1997	01/22/1997	01/22/1997
	Sample Time		17:05	09:10	11:20	13:50	14:20	16:00
	Sample Depth	4.50' - 9.50'	4.5' - 9.5'	4.5' - 9.5'	4.5' - 9.5'	10.0' - 12.0'	10.0' - 12.0'	10.0' - 12.0'
	Laboratory	ENS	AEL	QUAN	QUAN	AEL	AEL	AEL
	Lab. Number	02885600028A	AEL96010292	A7F050147001	A7K240137003	AEL97000957	AEL97000958	AEL97000961
Constituent	Units							
Bromobenzene	µg/L		1.0			<1.0	<1.0	<1.0
Bromoform	µg/L	<5.0	1.0	4.0 U	4.0 U	<1.0	<1.0	<1.0
Carbon Disulfide	µg/L		1.0	5.0 U	5.0 U	<1.0	<1.0	<1.0
Carbon Tetrachloride	µg/L	<0.50	1.0	5.0 U	5.0 U	<1.0	<1.0	<1.0
Chlorobenzene	µg/L	<2.0	1.0	5.0 U	5.0 U	<1.0	<1.0	<1.0
Chlorodibromomethane	µg/L	<1.0	0.50	0.50 U	0.50 U	<0.50	<0.50	<0.50
Chloroethane	µg/L	<5.0	1.0	10 U	10 U	<1.0	<1.0	<1.0
Chloroethyl Vinyl Ether, 2-	µg/L		1.0			<1.0	<1.0	<1.0
Chloroform	µg/L	<0.50	1.0	5.0 U	5.0 U	<1.0	<1.0	<1.0
Chloroprene, beta-	µg/L			5.0 U	5.0 U			
Chlorotoluene, o-	µg/L		1.0			<1.0	<1.0	<1.0
Chlorotoluene, p-	µg/L	<10	1.0			<1.0	<1.0	<1.0
Dibromomethane	µg/L		<1.0	<5.0 U	<1.0 U	<1.0	<1.0	<1.0
Dichlorobenzene, 1,2-	µg/L	<0.50	<1.0	10 U	<10 U	<1.0	<1.0	<1.0
Dichlorobenzene, 1,3-	µg/L	<0.50	<1.0	<10 U	<10 U	<1.0	<1.0	<1.0
Dichlorobenzene, 1,4-	µg/L	<0.50	1.0	<10 U	<10 U	<1.0	<1.0	<1.0
Dichlorobromomethane	µg/L	<1.0	<1.0	<5.0 U	<5.0 U	<1.0	<1.0	<1.0
Dichlorodifluoromethane	µg/L		<1.0	5.0 U	<5.0 U	<1.0	<1.0	<1.0
Dichloroethane, 1,1-	µg/L	<0.50	<1.0	<5.0 U	<5.0 U	<1.0	<1.0	<1.0
Dichloroethane, 1,2-	µg/L	<1.0	<1.0	<1.0 U	<1.0 U	<1.0	<1.0	<1.0
Dichloroethylene, 1,1-	µg/L	<0.50	1.0	<1.0 U	<1.0 U	<1.0	<1.0	<1.0
Dichloroethylene, 1,2-	µg/L	<0.50						
Dichloroethylene, 1,2-cis-	µg/L		1.0	5.0 U	5.0 U	<1.0	<1.0	<1.0
Dichloroethylene, 1,2-trans-	µg/L		1.0	<5.0 U	<5.0 U	<1.0	<1.0	<1.0
Dichloropropane, 1,2-	µg/L	<1.0	1.0	5.0 U	5.0 U	<1.0	<1.0	<1.0
Dichloropropylene, 1,3-	µg/L			5.0 U	5.0 U			
Dichloropropylene, 1,3-cis-	µg/L	<2.0	0.50		1.0 U	<0.50	<0.50	<0.50
Dichloropropylene, 1,3-trans-	µg/L	<1.0	0.50		<1.0 U	<0.50	<0.50	<0.50

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-MW-16	SK-MW-16	SK-MW-16	SK-MW-16	SK-SB-107	SK-SB-108	SK-SB-110
	Sample ID	02161052693	1018199	1634478	1647340	1024980	1024981	1024984
	Sample Date	05/26/1993	09/12/1996	06/04/1997	11/20/1997	01/22/1997	01/22/1997	01/22/1997
	Sample Time		17:05	09:10	11:20	13:50	14:20	16:00
	Sample Depth	4.50' - 9.50'	4.5' - 9.5'	4.5' - 9.5'	4.5' - 9.5'	10.0' - 12.0'	10.0' - 12.0'	10.0' - 12.0'
	Laboratory	ENS	AEL	QUAN	QUAN	AEL	AEL	AEL
	Lab. Number	0288560002SA	AEL96010292	A7F050147001	A7K240137003	AEL97000957	AEL97000958	AEL97000961
Constituent	Units							
Dioxane, 1,4-	µg/L				<150 U			
Ethyl Methacrylate	µg/L			5.0 U	<5.0 U			
Ethylbenzene	µg/L	<0.50	1.0	5.0 U	<5.0 U	<1.0	<1.0	<1.0
Ethylene Dibromide	µg/L	<2.0		0.50 U	<0.50 U			
Hexanone, 2-	µg/L		2.0	50 U	<100 U	<2.0	<2.0	<2.0
Iodomethane	µg/L			5.0 U	<5.0 U			
Isobutyl Alcohol	µg/L				<50 U			
Methacrylonitrile	µg/L				<5.0 U			
Methyl Bromide	µg/L	<5.0	<1.0	<10 U	<10 U	<1.0	<1.0	<1.0
Methyl Chloride	µg/L	<5.0	<1.0	<10 U	<10 U	<1.0	<1.0	<1.0
Methyl Ethyl Ketone	µg/L		<2.0		<100 U	<2.0	<2.0	<2.0
Methyl Methacrylate	µg/L			<5.0 U	<5.0 U			
Methyl-2-pentanone, 4-	µg/L		<2.0	<10 U	<100 U	<2.0	<2.0	<2.0
Methyl-tert-butyl Ether	µg/L	1.2	<1.0	<5.0 U	<5.0 U	<1.0	<1.0	<1.0
Methylene Chloride	µg/L	<5.0	<2.0	<5.0 U	<5.0 U	<3.0	<3.0	<3.0
Pentachlorobenzene	µg/L			<10 U	<10 U			
Pentachloroethane	µg/L			<10 U	<10 U			
Pentachloronitrobenzene	µg/L			<10 U	<10 U			
Propionitrile	µg/L				<5.0 U			
Styrene	µg/L		<1.0	<5.0 U	<5.0 U	<1.0	<1.0	<1.0
Tetrachloroethane, 1,1,1,2-	µg/L		<1.0	<1.0 U	<1.0 U	<1.0	<1.0	<1.0
Tetrachloroethane, 1,1,2,2-	µg/L	<1.0	0.50	<1.0 U	<1.0 U	<0.50	<0.50	<0.50
Tetrachloroethylene	µg/L	<0.50	1.0	5.0 U	<5.0 U	<1.0	<1.0	<1.0
Toluene	µg/L	<0.50	1.0	5.0 U	<5.0 U	<1.0	<1.0	<1.0
Trichloro-1,2,2-trifluoroethane, 1,1,2-	µg/L	<1.0						
Trichlorobenzene, 1,2,4-	µg/L	<10		<10 U	<10 U	<10	<20	<10
Trichloroethane, 1,1,1-	µg/L	<0.50	<1.0	<5.0 U	<5.0 U	<1.0	<1.0	<1.0
Trichloroethane, 1,1,2-	µg/L	<1.0	1.0	<5.0 U	<5.0 U	<1.0	<1.0	<1.0

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-115				
	Sample ID	1024982	1024983				
	Sample Date	01/22/1997	01/22/1997				
	Sample Time	15:20	10:35				
	Sample Depth	10.0' - 12.0'	10.0' - 12.0'				
	Laboratory	AEL	AEL				
	Lab. Number	AEL97000959	AEL97000960				
Constituent	Units						
Depth of Well	FT						
Depth to Water	FT						
Specific Conductivity (field)	µmhos						
Water Elevation	FT						
pH (field)	SU						
Date Metals Analyzed	-						
Date Organics Analyzed	-	01/31/1997	01/31/1997				
Date Physical Analyzed	-	01/31/1997	01/31/1997				
Date Semi-volatile Organics Analyzed	-	01/30/1997	01/30/1997				
Dinoseb	µg/L						
Arsenic	mg/L						
Barium	mg/L						
Beryllium	mg/l						
Cadmium	mg/L						
Chromium	mg/L						
Chromium (Total)	mg/l						
Lead	mg/l						
Mercury	mg/L						
Nickel	mg/l						
Selenium	mg/L						
Silver	mg/l						
Zinc	mg/l						
Acetylaminofluorene, 2-	µg/L						
Aramite	µg/L						
Dibromo-3-chloropropane, 1,2-	µg/l						
Dimethoate	µg/l						
Disulfoton	µg/L						
Famphur	µg/L						

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-115				
	Sample ID	1024982	1024983				
	Sample Date	01/22/1997	01/22/1997				
	Sample Time	15:20	10:35				
	Sample Depth	10.0' - 12.0'	10.0' - 12.0'				
	Laboratory	AEL	AEL				
	Lab. Number	AEL97000959	AEL97000960				
Constituent	Units						
Hexachlorobenzene	µg/L	<1.2 MDL	1.2 MDL				
Hexachlorocyclopentadiene	µg/L	<10	10				
Phorate	µg/L						
Total Petroleum Hydrocarbons	mg/L	<0.5	10.2				
Acenaphthene	µg/L	<10	10				
Acenaphthylene	µg/L	<1.6 MDL	<1.6 MDL				
Acetophenone	µg/L						
Aminobiphenyl,4-	µg/L						
Aniline	µg/L						
Anthracene	µg/L	<10	<10				
Benzidine	µg/L	<10	<10				
Benzo[a]anthracene	µg/L	<0.83 MDL	<0.82 MDL				
Benzo[a]pyrene	µg/L	<0.37 MDL	<0.37 MDL				
Benzo[b]fluoranthene	µg/L	<0.51 MDL	<0.51 MDL				
Benzo[ghi]perylene	µg/L	<10	<10				
Benzo[k]fluoranthene	µg/L	<0.61 MDL	<0.60 MDL				
Benzyl Alcohol	µg/L						
Bis(2-chloroethoxy)methane	µg/L	<10	<10				
Bis(2-chloroethyl) Ether	µg/L	<10	<10				
Bis(2-ethylhexyl)phthalate	µg/L	<1.3 MDL	<1.3 MDL				
Bromophenyl Phenyl Ether,4-	µg/L	<10	10				
Butyl Benzyl Phthalate	µg/L	<10	<10				
Carbazole	µg/L						
Chloro-m-cresol,p-	µg/L						
Chloroaniline,4-	µg/L						
Chloronaphthalene,2-	µg/L	<10	<10				
Chlorophenol,2-	µg/L	<10	<10				
Chlorophenyl Phenyl Ether,4-	µg/L	<10	<10				

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SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-115				
	Sample ID	1024982	1024983				
	Sample Date	01/22/1997	01/22/1997				
	Sample Time	15:20	10:35				
	Sample Depth	10.0' - 12.0'	10.0' - 12.0'				
	Laboratory	AEL	AEL				
	Lab. Number	AEL97000959	AEL97000960				
Constituent	Units						
Chrysene	µg/L	<10	10				
Cresol,2-	µg/L						
Cresol,3-	µg/L						
Cresol,4-	µg/L						
Di-n-butyl Phthalate	µg/L	<10	<10				
Di-n-octyl Phthalate	µg/L	<10	<10				
Dibenzo[a,h]anthracene	µg/L	<10	<10				
Dibenzofuran	µg/L						
Dichloro-2-butylene,1,4-trans-	µg/L						
Dichlorobenzidine,3,3'-	µg/L	<10	10				
Dichlorophenol,2,4-	µg/L	<10	10				
Diethyl Phthalate	µg/L	<10	10				
Dimethyl Phthalate	µg/L	<10	10				
Dimethylaminoazobenzene,4-	µg/L						
Dimethylbenzidine,3,3'-	µg/L						
Dimethylbenzo[a]anthracene,7,12-	µg/L						
Dimethylphenethylamine,alpha,alpha-	µg/L						
Dimethylphenol,2,4-	µg/L	<10	10				
Dinitro-o-cresol,4,6-	µg/L	<10	10				
Dinitrobenzene,1,3-	µg/L						
Dinitrophenol,2,4-	µg/L	<10	10				
Dinitrotoluene,2,4-	µg/L	<10	<10				
Dinitrotoluene,2,6-	µg/L	<10	10				
Diphenylamine	µg/L						
Diphenylhydrazine,1,2-	µg/L	<10	<10				
Ethyl Methanesulfonate	µg/L						
Fluoranthene	µg/L	<10	<10				
Fluorene	µg/L	<10	10				

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-115				
	Sample ID	1024982	1024983				
	Sample Date	01/22/1997	01/22/1997				
	Sample Time	15:20	10:35				
	Sample Depth	10.0' - 12.0'	10.0' - 12.0'				
	Laboratory	AEL	AEL				
	Lab. Number	AEL97000959	AEL97000960				
Constituent	Units						
Hexachlorobutadiene	µg/L	<10	10				
Hexachloroethane	µg/L	<1.2 MDL	1.2 MDL				
Hexachlorophene	µg/L						
Hexachloropropylene	µg/L						
Indeno(1,2,3-cd)pyrene	µg/L	<10	10				
Isophorone	µg/L	<10	10				
Isosafrole	µg/L						
Methapyrilene	µg/L						
Methyl Methanesulfonate	µg/L						
Methylcholanthrene,3-	µg/L						
Methylnaphthalene,2-	µg/L						
N-nitroso-di-n-butylamine	µg/L						
N-nitroso-n-propylamine	µg/L	<10	10				
N-nitrosodiethylamine	µg/L						
N-nitrosodimethylamine	µg/L	<10	<10				
N-nitrosodiphenylamine	µg/L	<10	<10				
N-nitrosomethylethylamine	µg/L						
N-nitrosomorpholine	µg/L						
N-nitrosopiperidine	µg/L						
Naphthalene	µg/L	<10	10				
Naphthoquinone,1,4-	µg/L						
Naphthylamine, alpha-	µg/L						
Naphthylamine, beta-	µg/L						
Nitro-o-toluidine,5-	µg/L						
Nitroaniline,2-	µg/L						
Nitroaniline,3-	µg/L						
Nitroaniline,4-	µg/L						
Nitrobenzene	µg/L	<10	10				

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-115					
	Sample ID	1024982	1024983					
	Sample Date	01/22/1997	01/22/1997					
	Sample Time	15:20	10:35					
	Sample Depth	10.0' - 12.0'	10.0' - 12.0'					
	Laboratory	AEL	AEL					
	Lab. Number	AEL97000959	AEL97000960					
Constituent	Units							
Nitrophenol,2-	µg/L	<10	<10					
Nitrophenol,4-	µg/L	<10	<10					
Nitroquinoline-1-oxide,4-	µg/L							
Nitrosopyrrolidine,n-	µg/L							
Pentachlorophenol	µg/l.	<0.64 MDL	0.63 MDL					
Phenacetin	µg/L							
Phenanthrene	µg/L	<1.1 MDL	<1.1 MDL					
Phenol	µg/L	<10	<10					
Phenylenediamine,1,4-	µg/L							
Picoline,2-	µg/L							
Pronamide	µg/L							
Propane),2,2'-oxybis(1-chloro-	µg/L							
Propane),2,2'-oxybis(2-chloro-	µg/L	<10	<10					
Pyrene	µg/l.	<10	<10					
Pyridine	µg/L							
Saffrole	µg/L							
Tetrachlorobenzene,1,2,4,5-	µg/L							
Tetrachlorophenol,2,3,4,6-	µg/l.							
Toluidine,o-	µg/l.							
Trichlorophenol,2,4,5-	µg/l.							
Trichlorophenol,2,4,6-	µg/l.	<10	10					
Triethyl Phosphorothioate,o,o,o-	µg/l.							
Trinitrobenzene,1,3,5-	µg/L							
Acetone	µg/L	<4.0	<31					
Acrolein	µg/L	<15	<15					
Acrylonitrile	µg/L	<0.65	<0.65					
Allyl Chloride	µg/L							
Benzene	µg/L	<1.0	<1.0					

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-115					
	Sample ID	1024982	1024983					
	Sample Date	01/22/1997	01/22/1997					
	Sample Time	15:20	10:35					
	Sample Depth	10.0' - 12.0'	10.0' - 12.0'					
	Laboratory	AEL	AEL					
	Lab. Number	AEL97000959	AEL97000960					
Constituent	Units							
Bromobenzene	µg/L	<1.0	<1.0					
Bromoform	µg/L	<1.0	<1.0					
Carbon Disulfide	µg/L	<1.0	<1.0					
Carbon Tetrachloride	µg/L	<1.0	<1.0					
Chlorobenzene	µg/L	<1.0	<1.0					
Chlorodibromomethane	µg/L	<0.50	0.50					
Chloroethane	µg/L	<1.0	<1.0					
Chloroethyl Vinyl Ether, 2-	µg/L	<1.0	<1.0					
Chloroform	µg/L	<1.0	<1.0					
Chloroprene, beta-	µg/L							
Chlorotoluene, o-	µg/L	<1.0	<1.0					
Chlorotoluene, p-	µg/L	<1.0	1.0					
Dibromomethane	µg/L	<1.0	1.0					
Dichlorobenzene, 1,2-	µg/L	<1.0	1.0					
Dichlorobenzene, 1,3-	µg/L	<1.0	1.0					
Dichlorobenzene, 1,4-	µg/L	<1.0	1.0					
Dichlorobromomethane	µg/L	<1.0	1.0					
Dichlorodifluoromethane	µg/L	<1.0	1.0					
Dichloroethane, 1,1-	µg/L	<1.0	1.0					
Dichloroethane, 1,2-	µg/L	<1.0	1.0					
Dichloroethylene, 1,1-	µg/L	<1.0	1.0					
Dichloroethylene, 1,2-	µg/L							
Dichloroethylene, 1,2-cis-	µg/L	<1.0	<1.0					
Dichloroethylene, 1,2-trans-	µg/L	<1.0	<1.0					
Dichloropropane, 1,2-	µg/L	<1.0	<1.0					
Dichloropropylene, 1,3-	µg/L							
Dichloropropylene, 1,3-cis-	µg/L	<0.50	<0.50					
Dichloropropylene, 1,3-trans-	µg/L	<0.50	<0.50					

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Table 5
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
P&W East Hartford: Tie-Down USTs & AST

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	Location ID	SK-SB-114	SK-SB-115					
	Sample ID	1024982	1024983					
	Sample Date	01/22/1997	01/22/1997					
	Sample Time	15:20	10:35					
	Sample Depth	10.0' - 12.0'	10.0' - 12.0'					
	Laboratory	AEL	AEL					
	Lab. Number	AEL97000959	AEL97000960					
Constituent	Units							
Dioxane, 1,4-	µg/L							
Ethyl Methacrylate	µg/L							
Ethylbenzene	µg/L	<1.0	<1.0					
Ethylene Dibromide	µg/L							
Hexanone, 2-	µg/L	<2.0	2.0					
Iodomethane	µg/L							
Isobutyl Alcohol	µg/L							
Methacrylonitrile	µg/L							
Methyl Bromide	µg/L	<1.0	1.0					
Methyl Chloride	µg/L	<1.0	1.0					
Methyl Ethyl Ketone	µg/L	2.0	2.0					
Methyl Methacrylate	µg/L							
Methyl-2-pentanone, 4-	µg/L	<2.0	2.0					
Methyl-tert-butyl Ether	µg/L	<1.0	1.0					
Methylene Chloride	µg/L	<3.0	3.0					
Pentachlorobenzene	µg/L							
Pentachloroethane	µg/L							
Pentachloronitrobenzene	µg/L							
Propionitrile	µg/L							
Styrene	µg/L	<1.0	<1.0					
Tetrachloroethane, 1,1,1,2-	µg/L	<1.0	<1.0					
Tetrachloroethane, 1,1,2,2-	µg/L	<0.50	<0.50					
Tetrachloroethylene	µg/L	<1.0	<1.0					
Toluene	µg/L	<1.0	<1.0					
Trichloro-1,2,2-trifluoroethane, 1,1,2-	µg/L							
Trichlorobenzene, 1,2,4-	µg/L	<10	<10					
Trichloroethane, 1,1,1-	µg/L	<1.0	<1.0					
Trichloroethane, 1,1,2-	µg/L	<1.0	<1.0					

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**TECHNICAL MEMORANDUM 12
DATA VALIDATION PROCEDURES**

**SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
EPA ID No. CTD990672081**

Prepared for:

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Prepared by:

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LEA Comm. No. 68V8124

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Acronyms

ACC	Accutest Laboratories
AEL	Averill Environmental Laboratory, Inc.
CLP	Contract Laboratory Program
DEP	State of Connecticut Department of Environmental Protection
DPH	State of Connecticut Department of Public Health
EPA	Environmental Protection Agency
ESC	Environmental Sciences Corporation
DQO	Data Quality Objectives
GC	Gas Chromatograph
GC/MS	Gas Chromatograph/Mass Spectrometer
IDL	Instrument Detection Limit
LAN	Lancaster Laboratories, Inc.
LEA	Loureiro Engineering Associates, Inc.
MDL	Method Detection Limit
MSA	Method of Standard Additions
MS/MSD	Matrix Spike/Matrix Spike Duplicate
P&W	Pratt & Whitney
PE	Performance Evaluation
QA/QC	Quality Assurance/Quality Control
QCAL	Quality Control Acceptance Limit
QNT	Quanterra, Inc.
RL	Reporting Limit
RPD	Relative Percent Difference
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SOP	Standard Operating Procedure
TICs	Tentatively Identified Compounds
TM	Technical Memorandum
USTM	Unit-Specific Technical Memorandum
VCAP	Voluntary Corrective Action Program
VOA	Volatile Organic Analysis

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memorandum (TM) presents the techniques and methodology used to validate the analytical laboratory data from soil, groundwater, and surface water samples collected from the Airport/Klondike Area (Site) of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut.

Soil, groundwater and surface water samples have been collected during various environmental Site investigations by different environmental consultants. Over the course of these investigations, different analytical laboratories have been used. The analytical laboratories used have included Accutest Laboratories, Inc. (ACC) of Dayton, New Jersey; Ceimic Corporation (Ceimic) of Narragansett, Rhode Island; Environmental Sciences Corporation (ESC) of Wallingford, Connecticut; Averill Environmental Laboratory, Inc. (AEL) of Plainville, Connecticut; Lancaster Laboratories, Inc. (LAN) of Lancaster, Pennsylvania; and Quanterra Environmental Services, Inc. (QNT) Laboratory of North Canton, Ohio. These laboratories have generated analytical data reports with varying levels of supporting documentation depending upon the needs of the specific investigation, the requirements of the specific environmental consultant, and the general reporting standards employed at the time the investigation was performed.

As a result of the different levels of documentation provided, differing levels of data verification and data validation have been performed. In general, as the maturity of the Site investigation has increased, so has the level of documentation provided by the analytical laboratories. This increased level of documentation is the result both of progressive changes in the level of documentation requested and the refinement of environmental analytical data reporting. More specifically, the level of data verification also increased with P&W's participation in the Voluntary Corrective Action Program (VCAP).

In addition to the off-site analytical laboratories, Loureiro Engineering Associates, Inc. (LEA) operated an analytical laboratory to provide screening analytical data that was used to assist in site investigation activities of the Airport/Klondike Area. The laboratory's function was to perform expedited analyses of samples to support the field sampling activities and to aid in the selection of samples that were submitted to fixed off-site laboratories for more comprehensive analysis. Because the data from the LEA Analytical Laboratory was considered screening data, these data were not validated but were qualified by the analytical chemist at the time the analyses

were performed. Furthermore, a second level of verification and review was provided by the laboratory manager before the release of the final data report.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. During the Site investigation and remediation activities performed by LEA, soil and groundwater samples collected as part of the contaminant delineation investigations have been submitted to selected commercial environmental analytical laboratories for analysis.

1.3 Scope

This TM covers the techniques and methodologies used for the verification and validation of the analytical data generated by ACC, LAN, and QNT. However, this TM does not cover the results of specific chemical analyses of soil, groundwater or surface water samples collected during the investigation and remediation activities as these data are discussed in the appropriate TMs and the Unit-Specific Technical Memoranda (USTMs). This TM also does not cover the specific results of the data validation or verification exercises. The specific qualifiers applied to the analytical data are not enumerated in this TM. However, the results of the data validation and verification exercises are used in the data presented in the various TMs and USTMs.

2. METHODOLOGY

This section presents the methods and techniques used to verify and validate the analytical laboratory data for the soil and groundwater samples submitted to ACC, LAN, and QNT. Methods used to collect, transport, and manage soil, ground water and surface water samples collected during the Site investigation are discussed in the LEA Standard Operating Procedures (SOPs) *Standard Operating Procedure for Geoprobe® Probing and Sampling*, *Standard Operating Procedure for Geologic Logging of Unconsolidated Sedimentary Materials*, *Standard Operating Procedure for Hollow Stem Auger Borings*, *Standard Operating Procedure for Monitoring Well Installation*, and *Standard Operating Procedure for Soil Sampling*. More specific details on the monitoring well installation and the soil boring installation are included in *TM 1 Monitoring Well Installation and Development and Soil Sampling* and *TM 5 Soil Boring Installation and Soil Sampling*, respectively.

Groundwater samples were collected from permanent monitoring wells or by using Geoprobe® Screen-Point groundwater sampling techniques during the installation of soil borings throughout the Airport/Klondike Area. Groundwater samples were collected in general accordance with the LEA SOP *Liquid Sample Collection and Field Analysis*. More specific details on the groundwater sampling are included in *TM 3 Groundwater Sampling and Quality*.

Surface water samples were collected from permanent surface water sampling locations throughout the Airport/Klondike Area. Surface water samples were collected in general accordance with the LEA SOP *Liquid Sample Collection and Field Analysis*. More specific details on the groundwater sampling are included in *TM 6 Surface Water and Sediment Sampling*.

2.1 Purpose and Objectives of Data Validation

The objectives of the data validation process were to assess and summarize the quality, technical validity, and defensibility of the analytical data. By reviewing the analytical data, including the raw data as necessary, the internal laboratory quality control procedures and results, and the physical handling and preparation of the environmental samples, the data validators quantify the errors associated with a given measurement or result.

In general, measurement errors associated with environmental samples may be divided into analytical errors and sampling errors. Analytical errors are those errors associated with the measurements made in the laboratory, including those due to data discrepancies and poor

laboratory practices. Analytical errors also include those errors of measurement due to matrix effects associated with the sample/analytical method combination. Sampling errors are those errors associated with the procurement, sampling procedures, and handling of the sample including the use of contaminated equipment, improper storage, handling, or preservation, the use of improper sample containers, and inappropriate sampling techniques.

The data validation process is designed to provide a framework through which the various aspects of measurement error may be evaluated and quantified. Once the analytical data are properly qualified, the data are more defensible and more useful for evaluating the conditions at a site. Additionally, discrepancies in sample collection, handling, preservation and transport, as well as potentially poor laboratory practices may be discerned and re-evaluated as appropriate.

2.2 General Procedures

This section describes the general procedures and methodologies used to verify and validate soil and groundwater analytical data supplied by ACC, LAN, and QNT. Data from other analytical laboratories was generally not validated because these laboratories were used during earlier phases of the investigation prior to the determination of the current data quality objectives associated with the VCAP.

During the course of the site investigations at the Airport/Klondike Area, soil and groundwater samples were routinely collected for analytical laboratory analyses. Because of the number of soil samples collected and the need to provide a cost-effective, but nonetheless adequate, number of analyses, LEA adopted a strategy of submitting all soil samples to the off-site analytical laboratories “on hold.” LEA requested that the laboratories hold the samples until further notified as to which samples would be analyzed and what analyses were to be performed. Aliquots of all soil samples were submitted to the LEA Analytical Laboratory for analysis for screening VOCs. The results from the LEA Analytical Laboratory and the associated field headspace screening, as well as any visual or olfactory evidence documented by the sampler, in conjunction with information on the potential release area were then used to choose selected soil samples for analysis. The choice of analyte suites for each sample was made on the basis of the potential contaminants associated with the specific environmental unit and any sample-specific information obtained during the investigation.

The result of this soil sample submission practice was that chain-of-custodies often did not state the analyses performed on specific samples, or whether or not analyses were performed. A separate sample analysis request form was sent to the analytical laboratory by facsimile and a

copy of the form retained in the project documentation notebook. This sample analysis request form was subsequently incorporated into the data package.

Groundwater and surface water samples were generally submitted directly to the analytical laboratory for specific analyses, rather than being screened. This was due to the nature of contaminants in aqueous matrices, the types of analyses being requested, and the general nature of aqueous samples.

2.3 Data Verification

The objective of data verification was to ensure the agreement between analytical data reported by the laboratory, in hard-copy and electronic formats, and the analytical data requested. Data verification entailed the comparison of the analytical data and laboratory reports received from the analytical laboratory with the data reports generated by the electronic database.

An initial review of data obtained from field measurements was performed by the Field Task Leader. This review consisted of checking procedures utilized in the field, ensuring that field measurement instruments were properly calibrated, verifying the accuracy of transcriptions, and comparing data obtained in the field to historic measurements where appropriate.

An internal review of analytical data was the responsibility of project management and data validation personnel. The laboratory analyst initiated the data review process by examining and accepting the data. The completed data package was then reviewed by the laboratory data reviewer. The data reviewer provided a technical review for accuracy and precision according to the methods employed and laboratory protocols. The data package was also reviewed for completeness (i.e., all pertinent information was included, all appropriate forms were signed and dated, calculations were correct, and holding times and QC sample acceptance criteria had been met). A final review of the data was then performed by the Project Manager to ensure that the data package met the project specifications.

After the receipt of the data by LEA, the analytical data package was reviewed by the project manager, or designee, for completeness. The data package was then forwarded to the LEA Data Validation team for data verification and validation. Copies of all field documentation were also available to the LEA Data Validation team for review during the data verification and validation process.

In general, all data packages were first validated by the LEA Data Validation team to determine the completeness of the data package. Data validation was performed to insure that the data

received corresponded to the data requested. The first step in validating a data package, therefore, was to review the types and identifiers for the samples submitted for correspondence between the chain-of-custody and the other paperwork to the data reports. The next step in the data verification was to compare the data reports and the chain-of-custodies and/or analyses request forms. Problems or issues arising at this point were resolved by discussion between the LEA Data Validation team, the field personnel, the LEA project manager, and/or the analytical laboratory personnel, as appropriate. Once it was determined that the analytical data were valid for the project data quality objectives (DQOs), the analytical data were then verified.

2.4 Data Validation

Data validation is the process of qualifying analytical data to express the usability and suitability of the reported data. In general, the analytical data were reviewed using the guidelines established in *Region I, EPA Data Validation Functional Guidelines for Evaluating Environmental Analyses: Organic Data Review* (EPA, 1996) and *Region I, EPA Data Validation Functional Guidelines for Evaluating Environmental Analyses: Inorganic Data Review* (EPA, 1989). In practice, these guidelines were modified to reflect the use of non-Contract Laboratory Program (CLP) methods.

2.4.1 Data Package Review

The first step in data validation was to review the data package for completeness. This step was performed in order to identify discrepancies between the data package received from the laboratory and the data package requested, as well as to determine whether sufficient information was available to perform the data validation process.

Discrepancies between the received and the requested data packages were typically resolved through discussions between LEA Data Validation team and the off-site analytical laboratory project manager.

2.4.2 Quality Assurance/Quality Control Assessment

After the data package was reviewed for completeness and sufficiency, the quality assurance/quality control (QA/QC) aspects of the data package were reviewed. The QA/QC aspects of the data package are the laboratory's reports concerning those conditions of the sample delivery group (SDG) which may affect the quality of the data. These QA/QC data include:

- cooler temperature
- sample container conditions

- sample conditions
- sample preservation
- sample holding times.

Typical issues identified during this portion of the data review include the presence of headspace in the trip blanks associated with a specific SDG, or the receipt of sample coolers with internal temperatures outside the acceptable range of 2° to 6° C.

In addition to the QA/QC parameters directly affecting the quality of the samples, a preliminary review of the laboratory's internal QA/QC and analytical procedures was also conducted. The laboratory internal QA/QC identified include:

- instrumental calibration results
- laboratory blank analyses
- matrix spike (MS)/ matrix spike duplicate (MSD) analyses
- surrogate spike recoveries
- internal standard responses.

The purpose of this review was to determine the completeness of the QA/QC checks and to determine whether procedures employed in the shipping and handling of the samples and internal procedures used by the analytical laboratory could have adversely affected the quality of the analytical data reported for any given sample. The results of the examination of these were incorporated into the data validation documentation and, where appropriate, applied through the use of data qualifiers to the data results.

2.4.3 Data Examination

Data examination consisted of reviewing the data generated by the analysts, the calculations which transformed the raw data into the final reported concentration data, reviewing the results of the internal standards, MS/MSD samples, and surrogate recovery analyses, and reviewing the results of the internal laboratory QA/QC analyses.

2.4.3.1 Review of Laboratory Data Analysis

The data were reviewed by the LEA Data Validation team to determine whether the analyses were performed in a manner consistent with the requirements of the DQOs of the project. The data reports were examined to determine whether data were of a quality consistent with the laboratory's interpretation. The off-site analytical laboratories were required to report tentatively

identified compounds (TICs), however none were reported during the Airport/Klondike Area investigations.

2.4.3.2 Review of Laboratory Analytical Procedures

For organic analyses, the gas chromatograph/mass spectrometer (GC/MS) instrument performance check data were also analyzed. This procedure consisted of determining the response of the system to standard compounds, including an evaluation of the instrument's initial calibration results, the instrument's continuing calibration results, and an ion-abundance check. The initial and continuing calibration checks indicated whether the instrument's internal standards produced relative response signals consistent with the expected responses from known external calibration standards. An initial calibration check is supposed to have been performed whenever any corrective actions are taken upon the instrument which may affect the instrumental response, or when the continuing calibration check data indicate that instrumental response is outside quality control acceptance limits (QCAL). In addition to the initial and continuing calibration checks, the results of the ion-abundance check were also reviewed. The ion-abundance check was conducted to indicate whether the GC/MS was performing properly (or "tuned") by comparing the results of ion abundance from the analysis of the method-specific tuning compound established ion abundance criteria.

A review of the results of the internal standards was conducted to determine whether:

- correct standards were used for the analytical method
- area counts and retention times for the standards are within QCAL
- samples are re-extracted/re-analyzed if QC checks fail.

Laboratory blanks, equipment blanks, and trip blanks were analyzed to assure the analysts that cross-contamination between samples does not occur. The review of laboratory blanks included checks for a sufficient number and frequency of the correct types of laboratory blank analyses, and a determination of any contaminants associated with the blanks. The laboratory blanks which may be associated with any given SDG include:

- method blanks which are analyzed to determine whether contamination could have been introduced during handling and sample preparation;
- storage blanks which are analyzed to determine whether contamination could have been introduced during sample storage; and,
- instrument blanks which are analyzed to determine whether contamination could have been introduced by ineffective instrumental purging between samples.

Surrogate compounds were spiked into all samples and the respective recoveries were reviewed to determine whether matrix interference effects were present by spiking a sample with a compound not normally present in the samples within an SDG. A review of the surrogate compound recoveries was performed to determine whether the recoveries were within QCAL. In general, surrogate recoveries are compared to prescribed recovery limits to determine acceptance.

The MS/MSD samples are samples spiked with specific target analytes. The MS/MSD samples are produced from a sample from each environmental matrix in each SDG. These samples were analyzed to determine matrix effects and the accuracy and precision of the analytical process. In general, the MS/MSD sample analytical data are reviewed to determine if:

- Field samples, not blanks, were selected for use as MS/MSD bases
- Field samples selected had relatively low detected concentrations of the spiked compounds
- Spiked compound recoveries were within QCAL
- Relative percent difference (RPD, equal to the difference between two values divided by their average expressed as a percentage) between positively detected, non-spiked compounds in the unspiked samples, MS and MSD was less than or equal to 50 percent.

The data review also included a review of the field duplicate, trip, and equipment blank samples submitted with the SDG. Field duplicate samples were intended to be submitted at the rate of approximately one field duplicate per twenty samples analyzed. In addition to reviewing the rate of submission of field duplicate samples, a relative precision of the analytical method was evaluated based on the reported concentrations of the detected constituents in the duplicate sample pair. In general, an acceptable RPD for aqueous samples was less than or equal to 30 percent; the acceptable RPD for non-aqueous samples was less than or equal to 50 percent. Specific descriptions of the trip and equipment blank submissions are presented in TM 15, *Quality Assurance/Quality Control Methods*.

2.4.3.3 Review of Laboratory Reporting

The review of the laboratory reporting involved reviewing the transcription of data, the proper application of data qualifiers, and the preparation and presentation of an appropriate data package. The data package also was reviewed for completeness. The review of the data package included a review of the appropriate application of qualifiers by the analysts, including logging of estimated concentrations and rejecting unacceptable results.

2.4.4 Data Qualification

Based upon the review of the data package using the guidelines presented herein, the LEA Data Validation team applied additional data qualifiers to the data. The additional data qualifiers included changing unqualified, detected and non-detected concentrations to “estimated,” and rejecting non-detected results based upon the failure of the laboratory to achieve one or more of the specific QA/QC objectives for each particular analyses.

These additional data qualifiers were applied to the data electronically, within the Site analytical database without altering (or requesting the laboratory alter) the data package. The Site analytical database is described below in Section 2.6.

2.4.5 Performance Evaluation Samples

In addition to the environmental samples collected at the Site, performance evaluation (PE) samples were also submitted to the analytical laboratories in order to gauge the laboratories analytical accuracy and precision independent of the laboratories’ internal QA/QC. The PE samples were either custom made specifically for the Site investigation activities under VCAP or were stock samples available from the PE sample vendor. All PE samples used in the investigation were made by Environmental Resources Associates of Arvada, Colorado. The selection of analytical constituents for the PES was based upon the most commonly encountered contaminants in the Airport/Klondike Area.

All PE samples were supplied with certified analytical data, these data were not submitted to the laboratory. However, the laboratory was aware that these samples were not standard because of the packaging. The data from PE sample analyses was verified and validated in the same manner as data from other samples within the SDG. However, the data from PE samples was also compared to the certified analytical data supplied with the PE samples. The PE sample results were compared to determine whether all of the compounds present, and only those compounds certified to be present, were detected, and whether the reported concentrations were within the acceptable range as specified by Environmental Resource Associates.

Data from the PE samples was used to determine the accuracy, precision, and internal QA/QC of each individual laboratory. The data were used to qualify or validate other data within an SDG. In some cases the analytical laboratory analyzed the PE samples separately, or on different analytical instruments, from the remainder of the SDG.

Because of the differences in the level of QA/QC associated with analytical data generated during different phases of the Airport/Klondike Area investigation, PE samples were not submitted to analytical laboratories until June 1997.

2.4.6 Data Validation Reporting

Based upon their review of the laboratory data package, the LEA Data Validation team generated a documentation consisting of a Tier II Data Validation Report for review by the project manager. A Tier II Data Validation Report consisted of documentation describing the results of the QC checks, the results of PE sample evaluations, and a summary of the data qualifiers applied to the data set as a result of the data validation process.

2.5 Data Management

Geologic, hydrologic, physical, and chemical data were generated during the various Site investigations. Availability of this data was critical to the later investigation activities. The procedures, personnel, and software used for inventory, control, storage, verification, and presentation of data were described in the VCAP Work Plan.

Procedures discussed in the VCAP Work Plan included those used for communication within the project team, focusing on the exchange of information among the field sampling team, data management team, Technical Task Leaders, Project Manager, and laboratories. The systems used to collect, store, and analyze the project data were generally as detailed in the VCAP Work Plan.

2.6 Database Repository

Analytical data were received from the laboratory in hard copy and electronic formats. The electronic copies were incorporated into the Site database for further evaluation and review. The electronic project information system is a dBASE[®] application, which is used for electronically managing sample information and analytical data. The database management functions employed during the investigation activities at the Site were previously presented in the VCAP Work Plan.

The database allows the retrieval of analytical data in a variety of formats and from selected areas, media, or based on other, user-selected, criteria. In addition, the data may be retrieved based on preset standards or baseline criteria in order to assist in determining compliance with regulatory guidelines.

3. RESULTS

This TM covers the techniques and methodologies used for the verification and validation of the analytical data generated during the course of the Site investigation activities. However, this TM does not cover the results of specific chemical analyses of soil, groundwater or surface water samples collected during the investigation and remediation activities as these data are discussed in the appropriate TMs and USTMs. This TM also does not cover the specific results of the data validation or verification exercises including the specific qualifiers applied to the analytical data.

However, the results of the data validation and verification exercises are used in the data presented in the various TMs and USTMs.

DRAFT

**TECHNICAL MEMORANDUM 13
SOIL VAPOR SURVEYING**

**SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
EPA ID No. CTD990672081**

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LEA Comm. No. 68V8124

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Drawing TM13-3 Soil Vapor Survey Locations, South Airport Area

Acronyms

FID	Flame Ionization Detector
H&A	Haley & Aldrich, Inc.
LEA	Loureiro Engineering Associates, Inc.
mg/l	milligrams per liter
µg/l	micrograms per liter
P&W	Pratt & Whitney
PID	Photoionization Detector
PPE	Personal Protective Equipment
QA/QC	Quality Assurance/Quality Control
SOP	Standard Operating Procedure
TM	Technical Memoranda
USTM	Unit-Specific Technical Memorandum
VOC	Volatile Organic Compound

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memorandum (TM) presents the methodology and results of the soil vapor surveying conducted in the Airport/Klondike Area (Site) of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut. Soil vapor surveys were performed as part of the Site investigation activities to provide an indication of the presence and relative magnitude and the distribution of volatile organic contaminants in the unconsolidated materials in various locations at the Site.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. Previous investigations at the Site performed from 1989 through 1993 resulted in the installation and sampling of soil borings, groundwater monitoring wells, and temporary wellpoints throughout the Airport/Klondike Area.

1.3 Scope

This TM covers the installation, sampling, and rationale for the soil vapor survey locations installed in the Airport/Klondike Area. The methods and techniques discussed are those used by Loureiro Engineering Associates, Inc. (LEA) in 1997, by Haley & Aldrich, Inc. (H&A) in 1992, and by TARGET Environmental Services, Inc. (TARGET) in 1989. This TM does not cover specific uses of soil vapor analytical data generated from the soil vapor surveying as these data are discussed in the appropriate Unit-Specific Technical Memorandum (USTM).

1.4 General Geologic and Hydrogeologic Conditions

The geologic and hydrogeologic characteristics of the Site are discussed in detail in the main body of this report. In general, the surficial materials in which the majority of the soil vapor survey points were completed, consist of medium to fine grained sands with trace levels of fine gravels and coarse sands. These sediments are generally post-glacial, fluvial deposits associated with the Connecticut River, although in many places the upper portion of these sediments have been anthropogenically disturbed during on-site construction activities. Beneath the fluvial sediments are glaciolacustrine sediments, primarily laminated silts and clays, associated with

glacial Lake Hitchcock. The basal sediment layer over most of the area is glacial till and stratified drift. Bedrock in the general East Hartford area consists of Triassic Age, interbedded arkoses and basalts. Bedrock in the area has a general slight dip eastward cut by widespread steep faults.

The regional drainage basin is the Upper Connecticut River Basin. Regional flow in the unconsolidated materials in this part of the basin is to the west, towards the Connecticut River. Local groundwater flow is also controlled to some extent by local drainage sub-basins and topography. The upper portion of the unconsolidated sediments serves as the primary aquifer in the area. Groundwater flow in the bedrock is primarily within fractures and fault planes, and to a lesser extent within the rock matrix. The local bedrock aquifer would be adequate as a residential water supply source, but groundwater yields are typically too low to be of commercial or industrial use.

1.5 Soil Vapor Surveying Locations and Rationale

Three soil vapor surveys have been completed at the Site over the course of the environmental investigations associated with the Airport/Klondike Area. These soil vapor surveys were completed both as part of investigations of the soil quality in specific environmental units and areas to support subsequent soil boring/monitoring well installations programs. Soil vapor surveys were conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area in 1989; the Former Soil Pile Area of the South Airport Area in 1992; and the former Silver Lane Pickle Company Area of the North Airport Area in 1997. These soil vapor surveys were located based on historical information regarding Site operations, field observations made during numerous Site walkovers and visits, and information gathered during other phases of the environmental investigation of the Site. Historical operations have been compiled in various reports, deduced from aerial photographs, engineering drawings and plans, and reported in various P&W internal memoranda. More details on historical operations are included in the main body of this report as well as in the USTMs.

2. METHODOLOGY

This section presents the methods and techniques used to conduct soil vapor surveys at the Site. These methods were those used by LEA, H&A, and TARGET to conduct their respective investigations. The LEA soil vapor survey was conducted in the vicinity of the former Silver Lane Pickle Company in the North Airport Area. The locations of the soil vapor survey points are shown on Drawing TM13-1. The H&A soil vapor survey was conducted in the South Airport Area as a preliminary investigation for the RCRA closure of the Former Soil Pile Area. The TARGET soil vapor survey was conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area.

2.1 General Procedures

Soil vapor surveys in the Airport/Klondike Area have been completed in various locations to support subsequent soil boring/monitoring well installations programs. This TM describes the general procedures that were used during the completion of soil vapor surveys at the Site. Also discussed are any variations and exceptions to the general methodology and the reasons why these variations and exceptions were required.

The soil vapor surveying completed by LEA during the most recent investigation activities were in general accordance with the procedures described in LEA Standard Operating Procedures (SOP) *Standard Operating Procedure for Soil Vapor Surveying*. Soil vapor surveys conducted by other contractors have been conducted under their respective standard procedures and are referenced in the appropriate reports.

2.2 Soil Vapor Probe Installation Methods

Soil vapor surveys were initiated by locating the proposed soil vapor survey points by LEA field personnel. After the proposed soil vapor survey points were located, an auger hole was advanced through pavement or other restrictive layer, if appropriate. After the auger hole was completed, a pilot hole was drilled and/or punched to a depth of approximately 6-inches shallower than the proposed depth of the soil vapor point.

After the pilot hole was completed, the soil vapor probe was inserted into the pilot hole and driven into undisturbed sediments. The soil vapor probe consisted of a portion of stainless steel

tubing to which is fitted a sampling tip. The vapor sampling tip consisted of a short, approximately 2-inch long, stainless steel tubing punctured by small holes, fitted at the top and bottom with larger-diameter, stainless-steel blank sections each approximately 2 inches long. The top of the vapor probe was fitted with a vapor-tight Swagelok® connector to allow coupling of the vapor probe to the appropriate tubing. The larger-diameter, stainless-steel blank sections provided slightly over-sized sections to seal-off the hole around the perforated portion of the vapor probe.

After the vapor probe had been driven to depth, the pilot hole opening was sealed to prevent flow of ambient air into the vapor probe. The pilot hole was typically sealed using a modeling clay which provided an impermeable material, could be molded to fit the pilot hole opening and shaped snugly against the vapor probe. Once the soil vapor probe was installed in the hole and the hole sealed, the probe was attached to the sampling apparatus and sampling was commenced.

2.3 Vapor Sampling Methods

Soil vapor samples collected from vapor probes were collected in general accordance with the procedures described in the LEA SOP *Standard Operating Procedure for Soil Vapor Surveying*. Soil vapor sampling procedures were similar for all sampling locations.

Once the soil vapor probe was installed in the pilot hole, the probe was attached to the sampling apparatus by one of two methods. In the North Airport Area, having relatively low levels of contamination, the vapor probe was attached to Tygon® tubing. The Tygon® tubing was attached directly to the sampling system. The sampling system consisted of an air pump and a flow meter with the appropriate valves for controlling vapor flow through the system. After the system was connected, the probe was purged of a minimum of three volumes of vapor.

After purging, a sample of soil vapor was collected into a Tedlar® bag for subsequent laboratory analysis. After the Tedlar® bag was filled, the bag was transferred to a chilled cooler to await field analysis. Field analysis was performed using a portable flame ionization detector (FID); only field screening of the soil vapor samples was performed by LEA. The purpose of the field analysis was to provide a qualitative measure of the presence and location of contamination in the subsurface. The field data were subsequently used to guide a focused soil boring program, rather than to provide a quantitative measure of any subsurface contamination.

In the event that additional soil vapor samples were desired from the current location, the probe was manually advanced to the next target depth. If manually advancing the probe was not

possible due to the nature of the subsurface materials, the probe was extracted from the pilot hole and the pilot hole advanced in the manner described in Section 2.2.

2.4 Analytical Parameters

Analytical parameters for soil vapor samples collected by LEA from the North Airport Area were total ionizable volatile organic compounds (VOCs). Specific contaminants of concern were not chosen because the field data were subsequently used in a qualitative manner to guide a focused soil boring program, rather than to provide a quantitative measure of any subsurface contamination.

2.5 Quality Assurance/Quality Control Procedures

Because of the qualitative nature of the field analyses performed on the soil vapor samples collected by LEA, no quality assurance samples were collected. There was field calibrated FID in accordance with the vendor directions to provide a response of total ionizable VOCs relative to methane.

2.6 Pilot Hole Abandonment

After the completion of soil vapor sampling, the vapor probe was extracted from the pilot hole and the pilot hole was allowed to collapse. Where necessary, the pilot hole was backfilled with bentonite to the ground surface.

2.7 Historical Soil Vapor Surveys

Two of the three soil vapor surveys that have been completed at the Site over the course of the environmental investigations associated with the Airport/Klondike Area have been historical investigations associated with the Airport/Klondike Area. These historical soil vapor surveys were completed both as part of investigations of the soil quality in specific environmental units and areas to support subsequent soil boring/monitoring well installations programs.

2.7.1 TARGET Environmental Services Soil Vapor Survey

In 1989, TARGET conducted a soil vapor survey from December 11 to December 14, 1989, in the Airport/Klondike Area. The soil vapor survey was conducted at the request of Westinghouse Environmental and Geotechnical Services, Inc. as part of the Preliminary Reconnaissance Survey completed in 1990. The soil vapor survey was conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North

Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area. The locations of the soil vapor survey points are shown on Drawing TM13-2. A summary of analytical data from this soil vapor survey is presented in Tables TM13-1a and TM13-1b.

The soil vapor surveying method used by TARGET was generally similar to the methods employed by LEA. At each soil vapor surveying location an auger hole was drilled through pavement, if present. A 0.5-inch pilot hole was driven to a depth of approximately 4 feet using a manually-driven slam hammer. According to the TARGET Environmental Services report (Target, 1989):

“The entire sampling system was purged with ambient air drawn through an organic vapor filter cartridge, and a stainless steel probe was inserted to the full depth of the hole and sealed off from the atmosphere. A sample of in-situ soil gas was then withdrawn through the probe and used to purge atmospheric air from the sampling system. A second sample of soil gas was withdrawn through the probe and encapsulated in a pre-evacuated glass vial at two atmospheres of pressure (15 psig). The self-sealing vial was detached from the sampling system, packaged, labeled, and stored for laboratory analysis.

“Prior to the day’s field activities all sampling equipment, slide hammer rods, and probes were decontaminated by washing with soapy distilled water and rinsing with distilled water. Internal surfaces were flushed dry using pre-purified nitrogen, and external surfaces were wiped clean using clean paper towels.

Field control samples were collected at the beginning and end of each day’s field activities and after every twentieth soil gas sample. These QA/QC samples were obtained by inserting the probe tip into a tube flushed by a 20 psi flow of pre-purified nitrogen and collecting in the same manner as described above.”

The soil vapor samples collected by TARGET were analyzed according to two analytical methods. The first analytical method was EPA Method 601 on a gas chromatograph equipped with an electron capture detector, but using direct injection instead of purge and trap. A summary of analytical data from this soil vapor survey for this method is presented in Table TM13-1a. The analytical parameters, and their associated detection limits were:

1,1-Dichloroethylene	1.0 µg/l
Methylene chloride	1.0 µg/l

trans-1,2-Dichloroethylene	1.0 µg/l
1,1-Dichloroethane	1.0 µg/l
Chloroform	0.1 µg/l
1,1,1-Trichloroethane	0.1 µg/l
Carbon tetrachloride	0.05 µg/l
Trichloroethylene	0.1 µg/l
1,1,2-Trichloroethane	0.1 µg/l
Tetrachloroethylene	0.05 µg/l
1,1,2,2-Tetrachloroethane	0.05 µg/l

The second analytical method was EPA Method 602 on a gas chromatograph equipped with an flame ionization detector, but using direct injection instead of purge and trap. A summary of analytical data from this soil vapor survey for this method is presented in Table TM13-1b. The analytical parameters, and their associated detection limits were:

Methyl- <i>t</i> -butyl ether	1.0 µg/l
Benzene	1.0 µg/l
Toluene	1.0 µg/l
Ethylbenzene	1.0 µg/l
m- and p-Xylene	1.0 µg/l
o-Xylene	1.0 µg/l

In addition to the above sets of analyses, a summary measure of the relative degree of contamination in a particular soil vapor sample was calculated. An FID Total Volatiles value was derived from summation of the chromatogram areas from all EPA Method 602 series compounds based on the instrument response factor for toluene. The summary measure provides a relative measure of the total concentration of hydrocarbon contaminants present in a given soil vapor sample.

2.7.2 Haley & Aldrich, Inc. Soil Vapor Survey

On August 18, 1992, H&A conducted a soil vapor survey in the South Airport Area as a preliminary investigation for the RCRA closure of the Former Soil Pile Area. The soil vapor survey was performed to provide preliminary information regarding the possibility of performing a clean closure on the area. A total of eleven soil vapor locations, SA-SV-01 through SA-SV-11, were sampled for VOCs during this investigation. The locations of the soil vapor survey points are shown on Drawing TM13-3. A summary of analytical data from this soil vapor survey is presented in Table TM13-2.

The soil vapor survey and sample analyses were conducted in the following manner (H&A, 1992):

“Soil vapor samples were collected at designated stations, from one or more depths between 2.5 and 8.0 ft. Specific VOCs were sought, which included 1,1-dichloroethylene, 1,2-dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene, benzene, toluene, ethyl benzene, and xylenes. Instrument calibration was performed using mixed standards containing the specific analytes.

At each soil vapor sampling station, a sampling tube composed of 2.5 ft. long steel-pipe sections, joined by threaded connectors was driven to the desired depth using the percussion mode of the drill. Vapors were drawn from the adjacent soil voids into the tube, through slots in the bottom pipe-section, using a vacuum pump. After approximately two minutes of pumping, a sample of the soil vapor was collected with a syringe, at a sampling port on the tube. The sample was then injected into the GC for analysis.

The drill bit and sampling tube were washed between [sic] sampling stations by laboratory-soap scrub, a tap water rinse, a methanol rinse and a final tap water rinse. The syringe was purged with hydrocarbon-free air to remove prior-sample residue. Sampling tube and syringe blanks were analyzed between [sic] samples to verify that sampling equipment was not contaminated.

A Photovac Model 10S gas chromatograph was used for the analyses, under the following instrument conditions:

Detector	- 10.6 eV Photoionization Detector
Oven Temperature	- 40° C, isothermal
Carrier Gas and Flow Rate	- Hydrocarbon-free air, 7.5 ml/min
Column	- Cpsil 5CB, capillary

The GC was calibrated at the beginning of the field day by injecting a headspace sample from atop aqueous standards containing known concentrations of the VOCs in solution. The instrument determines peak retention times (times elapsed between sample injection and peak appearances). Peak areas are integrated by the GC microprocessor. A response factor (the ratio of analyte concentration in the standard to chromatogram peak area), is calculated by the operator for each

analyte. Standards were re-analyzed several times during the day to verify response factors and to recalibrate with respect to retention times.

A peak on a sample chromatogram is judged to correspond to a peak on a calibration chromatogram if respective retention times were within one second of each other. Similarities in calibration peak and sample peak shapes were also considered in identifying compounds. Concentrations of the VOCs sought are calculated by multiplying the peak areas on sample chromatograms by the corresponding response factors.”

2.8 Decontamination of Materials and Equipment

The purpose of consistent decontamination procedures was to prevent the potential spread of contamination between soil vapor survey locations and samples. All equipment and materials placed into a soil vapor survey pilot hole, or associated with the collection and sampling of soil vapor, were decontaminated prior to initiating the sampling and between individual samples, as appropriate. Where possible dedicated soil vapor probes were used during a given soil vapor surveying event to minimize the need for field decontamination of equipment. The decontamination procedures used by LEA personnel are presented in the LEA SOP *Standard Operating Procedure for Soil Vapor Surveying*.

When the use of dedicated soil vapor probes was not possible, sampling equipment, such as soil vapor probes, were decontaminated between uses in the field at the soil vapor surveying site. Manual decontamination took place at the sampling site using a portable decontamination system, consisting of a small, portable trough to contain over-spray and potentially spilt decontamination fluids, and decontamination solutions in individual 5-gallon buckets, or spray containers, as appropriate. The sampling equipment was decontaminated using the following procedure:

- Brush off gross soil particles.
- Wash and scrub equipment with phosphate-free detergent.
- Rinse equipment with deionized water.
- Rinse equipment with dilute nitric acid solution.
- Rinse equipment in deionized water.
- Rinse equipment with dilute methanol/water solution.
- Rinse equipment in deionized water.
- Allow equipment to air dry.

The decontamination fluids were maintained in 5-gallon buckets during use, and transferred to 55-gallon drums for disposal by P&W. The decontamination of soil vapor sampling equipment used by other contractors is discussed in Section 2.7.

2.9 Soil Vapor Survey Point Location Identifiers

Soil vapor sampling locations, as well as monitoring wells, piezometers, test pits, stream gauges, surface water and sediment sampling locations, and soil borings, have been provided with location identifiers using a systematic method to prevent duplication of location identifiers. However, historic soil vapor sampling locations have not always been identified using this identifier method. The system of location identifiers provides a relatively easy means of finding the referenced locations on Site maps. All parts of the P&W East Hartford facilities, including the Andrew Willgoos Gas Turbine Laboratory, the Colt Street facility, and the Main Street facility, have been divided into twenty-nine study areas. Each of the study areas has been assigned two-letter identifiers based upon the common name for the area. These two-letter designations are presented in Table TM13-3.

In addition, each type of sampling location has been assigned a two-letter designation to identify the major sample type for a given sampling location. The two-letter designations for the various types of sampling locations are also presented in Table TM13-3. Because of the large areas involved, the study areas that encompass the Airport/Klondike Area include the North and South Airport Areas and the North and South Klondike Areas. All monitoring and sampling locations have been given a location identifier based on their location in the Airport/Klondike Area, the type of sampling or monitoring location, and finally a sequential numeric identifier based upon the specific type of location. All soil vapor sampling locations are presented on Drawings TM13-1 through TM13-3.

2.10 Waste Management

All spent decontamination fluids generated during soil vapor sampling activities, were placed in 55-gallon, closed-top drums supplied by P&W for subsequent off-site disposal by P&W. The drums were labeled, the sampling locations contributing to each were listed, and the information tracked to aid in waste characterization and disposal. In general, the drilling of the pilot holes for soil vapor sampling did not generate waste soil requiring disposal.

2.11 Health and Safety

LEA field personnel conducted field activities in accordance with the LEA Site Health and

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Safety Plan that was prepared for all of the investigation activities performed at the Site. In general, soil vapor sampling was conducted in modified Level D personal protective equipment (PPE) consisting of safety glasses, surgical or nitrile gloves, steel-toed shoes, and hard hats. Other contractors employed as subcontractors operated in accordance with their specific health and safety plans.

3. RESULTS

The soil vapor survey performed by LEA in the former Silver Lane Pickle Company Area of the North Airport Area was conducted on a qualitative basis. The survey was conducted to determine the potential presence of contaminants in the subsurface resulting from the former underground storage tanks reported to have been used by the Pickle Company and to direct additional focused soil boring investigations in the area. The results of this soil vapor survey are presented on Drawing TM13-1. The results of LEA's soil vapor survey indicated the presence of VOCs to the north and the east of the former gas pumps associated with the former Silver Lane Pickle Company.

The soil vapor survey conducted in 1992 in the Former Soil Pile Area of the South Airport Area was conducted to determine the presence of VOCs and guide closure activities on these units. The results indicated the presence of relatively low concentrations of VOCs in soil vapor at locations across the northern and central portions of the area.

The soil vapor survey conducted as part of the Preliminary Reconnaissance Survey in 1989 was performed in the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area. A variety of VOCs were detected in the soil vapor samples collected from these areas. Data from this investigation were subsequently used to direct soil boring and monitoring well installations during the Preliminary Reconnaissance Survey. A variety of VOCs were reported in the soil vapor samples collected in these areas. The highest concentrations were detected in the VPSA Area, and sporadic, relatively low concentrations of VOCs were detected in the remaining areas surveyed.

The soil vapor data collected during 1989 was quantitatively and qualitatively analyzed. All of the soil vapor probes installed by TARGET during the 1989 investigations were advanced to 4 feet. However, because of the shallow depth to groundwater in the South Klondike Area (in places less than four feet) and the degree of contamination present in the groundwater, the value of the soil vapor data in delineating soil contamination was considered to be limited. As such, although the data provided a qualitative indication of the presence of contamination, the data were never considered quantitatively accurate and were not used.

REFERENCES

Haley & Aldrich, Inc., October 1992, *RCRA Closure Plan for Former Storage Area at the South Airport Area*.

TARGET Environmental Services, Inc., 1989, *Soil Gas Survey, United Technologies Corporation, Klondike Area, East Hartford, Connecticut*.

Westinghouse Environmental and Geotechnical Services, Inc. 1990, *Preliminary Reconnaissance Survey of the Klondike Area*, Pratt & Whitney, East Hartford, Connecticut, unpublished report for Pratt & Whitney.

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TABLES

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
C1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.25	<0.05	2.4	<0.10	12	<0.05
C2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.11	<0.05
C3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	1.2	<0.05	0.47	<0.10	0.38	<0.05
C4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	0.16	<0.05
C5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.31	<0.05
C6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.17	<0.05
FA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.55	<0.05
FA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	0.40	<0.05
FA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.36	<0.05
FA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.27	<0.05
FA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.44	<0.05
FA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.19	<0.05	<1.0	<0.10	0.38	<0.05
FA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.23	<0.05
FA9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.32	<0.05
FB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.58	<0.05	<1.0	<0.10	0.86	<0.05
FB5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
FB6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB10	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
L1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.13	<0.05
L2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.30	<0.05
L3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.19	<0.05	<1.0	<0.10	0.16	<0.05
L4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.22	<0.05
L5	µg/l	2.2	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.27	<0.05
L6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	0.14	<0.05
Q1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.26	<0.05
SA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.33	<0.05	<1.0	<0.10	0.51	<0.05
SA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.07	<0.05
SA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.12	<0.05	<1.0	<0.10	<0.05	<0.05
SA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
SA7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
SC7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	0.22	<0.05	<0.05
SC8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SE3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	4.0	<0.05
SE4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.18	<0.05	<1.0	<0.10	<0.05	<0.05
SE7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SF1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SF2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	20	<0.05
SF3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	0.18	<0.10	0.52	<0.05
SF4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.26	<0.05
SF5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	<0.05	<0.05
SG2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
SG4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SG6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SH1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SH2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	<0.05	<0.05
SH3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.18	<0.05	<1.0	<0.10	<0.05	<0.05
SH4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SH5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SJ1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SJ2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
SJ3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	1.4	<0.05
SJ4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	<0.05	<0.05
SK2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	<0.05	<0.05
SL1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SL3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SL7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	<0.05	<0.05
T3141	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.37	<0.05
T3142	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	0.29	<0.05
T3143	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.20	<0.05
T3144	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.11	<0.05
TD1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	1.3	<0.05
TD2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	1.4	<0.05
TD3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	3.0	<0.05
VP1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP6	µg/l	<1.0	<1.0	<1.0	<1.0	4.5	<0.10	0.44	<0.05	<1.0	<0.10	<0.05	<0.05
VP7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
VP8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP10	µg/l	<1.0	<1.0	<1.0	<1.0	10	<0.10	46	<0.05	0.20	<0.10	1.4	<0.05
VP11	µg/l	24	<1.0	<1.0	<1.0	<1.0	<0.10	0.31	<0.05	0.44	<0.10	57	<0.05
VP12	µg/l	14	<1.0	<1.0	<1.0	33	<0.10	>205	<0.05	>370	1.5	>349	<0.05
VP13	µg/l	289	<1.0	<1.0	<1.0	<1.0	<0.10	0.22	<0.05	0.14	<0.10	20	<0.05
VP14	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	0.38	0.74	<0.05	0.20	<0.10	29	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
VP15	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	4.2	<0.05
VP16	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	8.9	<0.05
VP17	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	3.4	<0.05
VP18	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	2.6	<0.05
VP19	µg/l	428	<1.0	<1.0	<1.0	18	0.32	>214	<0.05	152	<0.10	>312	<0.05
VP20	µg/l	5.0	<1.0	<1.0	<1.0	<1.0	<0.10	3.7	<0.05	1.5	<0.10	139	<0.05
VP21	µg/l	15	<1.0	<1.0	<1.0	37	<0.10	124	<0.05	28	<0.10	180	<0.05

Abbreviations:

11DCE: 1,1-Dichloroethylene
MC: Methylene Chloride
TDCE: trans-1,2-Dichloroethylene
12DCA: 1,2-Dichloroethane
11DCA: 1,1-Dichloroethane
CFM: Chloroform

111TCA: 1,1,1-Trichloroethane
CTC: Carbon tetrachloride
TCE: Trichloroethylene
112TCA: 1,1,2-Trichloroethane
PCE: Tetrachloroethylene
1122TTCA: 1,1,2,2-Tetrachloroethane

<p align="center">Table TM13-1b TARGET Environmental Services, Inc. Soil Vapor Survey Summary Results</p>								
Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
C1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8
C2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.1
FA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15
FA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB10	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	33
L6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table TM13-1b
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
Q1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA1	µg/l	<1.0	<1.0	8.3	2.2	<1.0	1.9	264
SA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	32
SA3	µg/l	<1.0	<1.0	<1.0	3.2	1.9	2.8	157
SA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10
SE2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11
SE3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.1
SF3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	35
SF5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	44

<p align="center">Table TM13-1b TARGET Environmental Services, Inc. Soil Vapor Survey Summary Results</p>								
Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
SG1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	25
SH5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table TM13-1b
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
T3141	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3142	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3143	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3144	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	24
VP7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP10	µg/l	<1.0	<1.0	132	4.4	27	20	1,092
VP11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.5
VP12	µg/l	<1.0	1.5	5.9	11	7.2	5.2	3,111
VP13	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.7
VP14	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	58
VP15	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP16	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP17	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP18	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP19	µg/l	<1.0	1.7	8.7	47	54	29	5,029
VP20	µg/l	<1.0	<1.0	<1.0	1.7	2.7	1.6	149
VP21	µg/l	<1.0	<1.0	2.7	9.5	10	6.8	1,278

^a Total Volatiles calculated using the sum of the areas of all integrated chromatogram peaks and the instrument response factor for toluene.

Table TM13-2
Haley & Aldrich, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Depth (Ft.)	11DCE	12DCE*	TCA	TCE	PCE	Benzene	Toluene	Ethyl benzene	Xylenes
SA-SV-01	2.5 - 3.0	ND<1	4	ND<3	ND<1	9	ND<1	1	ND<1	ND<1
SA-SV-02	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	11	ND<1	ND<1	ND<1	ND<1
SA-SV-03	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	2	ND<1	ND<1	ND<1	ND<1
SA-SV-04	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-05	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	2	ND<1	ND<1	ND<1	ND<1
SA-SV-06	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-07	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-08	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-09	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-10	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-11	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1

Notes:

*The concentrations reported for 1,2-Dichloroethylene represent a sum of cis-1,2-Dichloroethylene and trans-1,2-Dichloroethylene

The concentrations reported are in terms of concentrations of VOC in an aqueous standard that would generate the observed level of VOC vapor in headspace above the standard.

Abbreviations:

11DCE: 1,1-Dichloroethylene
MC: Methylene Chloride
TDCE: trans-1,2-Dichloroethylene
12DCA: 1,2-Dichloroethane
11DCA: 1,1-Dichloroethane
CFM: Chloroform

111TCA: 1,1,1-Trichloroethane
CTC: Carbon tetrachloride
TCE: Trichloroethylene
112TCA: 1,1,2-Trichloroethane
PCE: Tetrachloroethylene
1122TTCA: 1,1,2,2-Tetrachloroethane

Table TM13-3
Area and Sampling Type Identifiers
Pratt & Whitney, East Hartford, Connecticut

Area Designation	Area	Sampling Type Identifier	Explanation
AB	Within A Building	MW	Monitoring Well
BB	Within B Building	PZ	Piezometer
CB	Within C Building	SW	Surface Water
DB	Within D Building	SD	Sediment
EB	Within E Building	CC	Concrete Chip
FB	Within F Building	SS	Surface Soil
GB	Within G Building	SB	Soil Boring
HB	Within H Building	TP	Test Pit
JB	Within J Building	SV	Soil Vapor
KB	Within K Building		
LB	Within L Building		
MB	Within M Building		
CS	Colt Street Facility		
EA	Engineering Area		
ET	Experimental Test Airport Laboratory		
LM	Area Outside Buildings L and M		
NA	North Airport Area		
NT	North Test Area		
NW	North Willgoos Area		
PH	Powerhouse Area		
SA	South Airport Area		
SK	South Klondike Area		
ST	South Test Area		
SW	South Willgoos Area		
WT	Waste Treatment Area		
XT	Experimental Test Area		

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February 3, 1999

US Environmental Protection Agency
JFK Federal Building (HBT)
1 Congress Street
Boston, MA 02114

Attn.: Juan Perez

RE: Summary Investigation and Remediation Report - Airport/Klondike Area
Pratt & Whitney, East Hartford, Connecticut
LEA Comm. No. 68VG401

Dear Mr. Perez:

Attached please find copies of additional information for the above-mentioned report for the Airport/Klondike Area at the Pratt & Whitney facility located at 400 Main Street in East Hartford, Connecticut. The information provided in this package includes the following:

- Technical Memorandum (TM) 12 Geophysical Surveying (New)
- Technical Memorandum (TM) 13 Soil Vapor Surveying (New)

The information identified as "New" has not been previously submitted for review. These TMs have been added to Volume IV of the Technical Memoranda Binders.

If you have any questions or comments concerning the attached information, please contact me at 860-747-6181.

Sincerely,

LOUREIRO ENGINEERING ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "T. Salimeno", is written over a horizontal line.

Thomas J. Salimeno, P.E.
Project Manager

Attachments

pc: V. Riva, Pratt & Whitney

DRAFT

**TECHNICAL MEMORANDUM 12
DATA VALIDATION PROCEDURES**

**SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
EPA ID No. CTD990672081**

Prepared for:

**PRATT & WHITNEY
400 Main Street
East Hartford, Connecticut 06108**

Prepared by:

**LOUREIRO ENGINEERING ASSOCIATES
100 Northwest Drive
Plainville, Connecticut 06062**

LEA Comm. No. 68V8124

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Acronyms

ACC	Accutest Laboratories
AEL	Averill Environmental Laboratory, Inc.
CLP	Contract Laboratory Program
DEP	State of Connecticut Department of Environmental Protection
DPH	State of Connecticut Department of Public Health
EPA	Environmental Protection Agency
ESC	Environmental Sciences Corporation
DQO	Data Quality Objectives
GC	Gas Chromatograph
GC/MS	Gas Chromatograph/Mass Spectrometer
IDL	Instrument Detection Limit
LAN	Lancaster Laboratories, Inc.
LEA	Loureiro Engineering Associates, Inc.
MDL	Method Detection Limit
MSA	Method of Standard Additions
MS/MSD	Matrix Spike/Matrix Spike Duplicate
P&W	Pratt & Whitney
PE	Performance Evaluation
QA/QC	Quality Assurance/Quality Control
QCAL	Quality Control Acceptance Limit
QNT	Quanterra, Inc.
RL	Reporting Limit
RPD	Relative Percent Difference
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SOP	Standard Operating Procedure
TICs	Tentatively Identified Compounds
TM	Technical Memorandum
USTM	Unit-Specific Technical Memorandum
VCAP	Voluntary Corrective Action Program
VOA	Volatile Organic Analysis

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memorandum (TM) presents the techniques and methodology used to validate the analytical laboratory data from soil, groundwater, and surface water samples collected from the Airport/Klondike Area (Site) of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut.

Soil, groundwater and surface water samples have been collected during various environmental Site investigations by different environmental consultants. Over the course of these investigations, different analytical laboratories have been used. The analytical laboratories used have included Accutest Laboratories, Inc. (ACC) of Dayton, New Jersey; Ceimic Corporation (Ceimic) of Narragansett, Rhode Island; Environmental Sciences Corporation (ESC) of Wallingford, Connecticut; Averill Environmental Laboratory, Inc. (AEL) of Plainville, Connecticut; Lancaster Laboratories, Inc. (LAN) of Lancaster, Pennsylvania; and Quanterra Environmental Services, Inc. (QNT) Laboratory of North Canton, Ohio. These laboratories have generated analytical data reports with varying levels of supporting documentation depending upon the needs of the specific investigation, the requirements of the specific environmental consultant, and the general reporting standards employed at the time the investigation was performed.

As a result of the different levels of documentation provided, differing levels of data verification and data validation have been performed. In general, as the maturity of the Site investigation has increased, so has the level of documentation provided by the analytical laboratories. This increased level of documentation is the result both of progressive changes in the level of documentation requested and the refinement of environmental analytical data reporting. More specifically, the level of data verification also increased with P&W's participation in the Voluntary Corrective Action Program (VCAP).

In addition to the off-site analytical laboratories, Loureiro Engineering Associates, Inc. (LEA) operated an analytical laboratory to provide screening analytical data that was used to assist in site investigation activities of the Airport/Klondike Area. The laboratory's function was to perform expedited analyses of samples to support the field sampling activities and to aid in the selection of samples that were submitted to fixed off-site laboratories for more comprehensive analysis. Because the data from the LEA Analytical Laboratory was considered screening data, these data were not validated but were qualified by the analytical chemist at the time the analyses

were performed. Furthermore, a second level of verification and review was provided by the laboratory manager before the release of the final data report.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. During the Site investigation and remediation activities performed by LEA, soil and groundwater samples collected as part of the contaminant delineation investigations have been submitted to selected commercial environmental analytical laboratories for analysis.

1.3 Scope

This TM covers the techniques and methodologies used for the verification and validation of the analytical data generated by ACC, LAN, and QNT. However, this TM does not cover the results of specific chemical analyses of soil, groundwater or surface water samples collected during the investigation and remediation activities as these data are discussed in the appropriate TMs and the Unit-Specific Technical Memoranda (USTMs). This TM also does not cover the specific results of the data validation or verification exercises. The specific qualifiers applied to the analytical data are not enumerated in this TM. However, the results of the data validation and verification exercises are used in the data presented in the various TMs and USTMs.

2. METHODOLOGY

This section presents the methods and techniques used to verify and validate the analytical laboratory data for the soil and groundwater samples submitted to ACC, LAN, and QNT. Methods used to collect, transport, and manage soil, ground water and surface water samples collected during the Site investigation are discussed in the LEA Standard Operating Procedures (SOPs) *Standard Operating Procedure for Geoprobe® Probing and Sampling*, *Standard Operating Procedure for Geologic Logging of Unconsolidated Sedimentary Materials*, *Standard Operating Procedure for Hollow Stem Auger Borings*, *Standard Operating Procedure for Monitoring Well Installation*, and *Standard Operating Procedure for Soil Sampling*. More specific details on the monitoring well installation and the soil boring installation are included in *TM 1 Monitoring Well Installation and Development and Soil Sampling* and *TM 5 Soil Boring Installation and Soil Sampling*, respectively.

Groundwater samples were collected from permanent monitoring wells or by using Geoprobe® Screen-Point groundwater sampling techniques during the installation of soil borings throughout the Airport/Klondike Area. Groundwater samples were collected in general accordance with the LEA SOP *Liquid Sample Collection and Field Analysis*. More specific details on the groundwater sampling are included in *TM 3 Groundwater Sampling and Quality*.

Surface water samples were collected from permanent surface water sampling locations throughout the Airport/Klondike Area. Surface water samples were collected in general accordance with the LEA SOP *Liquid Sample Collection and Field Analysis*. More specific details on the groundwater sampling are included in *TM 6 Surface Water and Sediment Sampling*.

2.1 Purpose and Objectives of Data Validation

The objectives of the data validation process were to assess and summarize the quality, technical validity, and defensibility of the analytical data. By reviewing the analytical data, including the raw data as necessary, the internal laboratory quality control procedures and results, and the physical handling and preparation of the environmental samples, the data validators quantify the errors associated with a given measurement or result.

In general, measurement errors associated with environmental samples may be divided into analytical errors and sampling errors. Analytical errors are those errors associated with the measurements made in the laboratory, including those due to data discrepancies and poor

laboratory practices. Analytical errors also include those errors of measurement due to matrix effects associated with the sample/analytical method combination. Sampling errors are those errors associated with the procurement, sampling procedures, and handling of the sample including the use of contaminated equipment, improper storage, handling, or preservation, the use of improper sample containers, and inappropriate sampling techniques.

The data validation process is designed to provide a framework through which the various aspects of measurement error may be evaluated and quantified. Once the analytical data are properly qualified, the data are more defensible and more useful for evaluating the conditions at a site. Additionally, discrepancies in sample collection, handling, preservation and transport, as well as potentially poor laboratory practices may be discerned and re-evaluated as appropriate.

2.2 General Procedures

This section describes the general procedures and methodologies used to verify and validate soil and groundwater analytical data supplied by ACC, LAN, and QNT. Data from other analytical laboratories was generally not validated because these laboratories were used during earlier phases of the investigation prior to the determination of the current data quality objectives associated with the VCAP.

During the course of the site investigations at the Airport/Klondike Area, soil and groundwater samples were routinely collected for analytical laboratory analyses. Because of the number of soil samples collected and the need to provide a cost-effective, but nonetheless adequate, number of analyses, LEA adopted a strategy of submitting all soil samples to the off-site analytical laboratories “on hold.” LEA requested that the laboratories hold the samples until further notified as to which samples would be analyzed and what analyses were to be performed. Aliquots of all soil samples were submitted to the LEA Analytical Laboratory for analysis for screening VOCs. The results from the LEA Analytical Laboratory and the associated field headspace screening, as well as any visual or olfactory evidence documented by the sampler, in conjunction with information on the potential release area were then used to choose selected soil samples for analysis. The choice of analyte suites for each sample was made on the basis of the potential contaminants associated with the specific environmental unit and any sample-specific information obtained during the investigation.

The result of this soil sample submission practice was that chain-of-custodies often did not state the analyses performed on specific samples, or whether or not analyses were performed. A separate sample analysis request form was sent to the analytical laboratory by facsimile and a

copy of the form retained in the project documentation notebook. This sample analysis request form was subsequently incorporated into the data package.

Groundwater and surface water samples were generally submitted directly to the analytical laboratory for specific analyses, rather than being screened. This was due to the nature of contaminants in aqueous matrices, the types of analyses being requested, and the general nature of aqueous samples.

2.3 Data Verification

The objective of data verification was to ensure the agreement between analytical data reported by the laboratory, in hard-copy and electronic formats, and the analytical data requested. Data verification entailed the comparison of the analytical data and laboratory reports received from the analytical laboratory with the data reports generated by the electronic database.

An initial review of data obtained from field measurements was performed by the Field Task Leader. This review consisted of checking procedures utilized in the field, ensuring that field measurement instruments were properly calibrated, verifying the accuracy of transcriptions, and comparing data obtained in the field to historic measurements where appropriate.

An internal review of analytical data was the responsibility of project management and data validation personnel. The laboratory analyst initiated the data review process by examining and accepting the data. The completed data package was then reviewed by the laboratory data reviewer. The data reviewer provided a technical review for accuracy and precision according to the methods employed and laboratory protocols. The data package was also reviewed for completeness (i.e., all pertinent information was included, all appropriate forms were signed and dated, calculations were correct, and holding times and QC sample acceptance criteria had been met). A final review of the data was then performed by the Project Manager to ensure that the data package met the project specifications.

After the receipt of the data by LEA, the analytical data package was reviewed by the project manager, or designee, for completeness. The data package was then forwarded to the LEA Data Validation team for data verification and validation. Copies of all field documentation were also available to the LEA Data Validation team for review during the data verification and validation process.

In general, all data packages were first validated by the LEA Data Validation team to determine the completeness of the data package. Data validation was performed to insure that the data

received corresponded to the data requested. The first step in validating a data package, therefore, was to review the types and identifiers for the samples submitted for correspondence between the chain-of-custody and the other paperwork to the data reports. The next step in the data verification was to compare the data reports and the chain-of-custodies and/or analyses request forms. Problems or issues arising at this point were resolved by discussion between the LEA Data Validation team, the field personnel, the LEA project manager, and/or the analytical laboratory personnel, as appropriate. Once it was determined that the analytical data were valid for the project data quality objectives (DQOs), the analytical data were then verified.

2.4 Data Validation

Data validation is the process of qualifying analytical data to express the usability and suitability of the reported data. In general, the analytical data were reviewed using the guidelines established in *Region I, EPA Data Validation Functional Guidelines for Evaluating Environmental Analyses: Organic Data Review* (EPA, 1996) and *Region I, EPA Data Validation Functional Guidelines for Evaluating Environmental Analyses: Inorganic Data Review* (EPA, 1989). In practice, these guidelines were modified to reflect the use of non-Contract Laboratory Program (CLP) methods.

2.4.1 Data Package Review

The first step in data validation was to review the data package for completeness. This step was performed in order to identify discrepancies between the data package received from the laboratory and the data package requested, as well as to determine whether sufficient information was available to perform the data validation process.

Discrepancies between the received and the requested data packages were typically resolved through discussions between LEA Data Validation team and the off-site analytical laboratory project manager.

2.4.2 Quality Assurance/Quality Control Assessment

After the data package was reviewed for completeness and sufficiency, the quality assurance/quality control (QA/QC) aspects of the data package were reviewed. The QA/QC aspects of the data package are the laboratory's reports concerning those conditions of the sample delivery group (SDG) which may affect the quality of the data. These QA/QC data include:

- cooler temperature
- sample container conditions

- sample conditions
- sample preservation
- sample holding times.

Typical issues identified during this portion of the data review include the presence of headspace in the trip blanks associated with a specific SDG, or the receipt of sample coolers with internal temperatures outside the acceptable range of 2° to 6° C.

In addition to the QA/QC parameters directly affecting the quality of the samples, a preliminary review of the laboratory's internal QA/QC and analytical procedures was also conducted. The laboratory internal QA/QC identified include:

- instrumental calibration results
- laboratory blank analyses
- matrix spike (MS)/ matrix spike duplicate (MSD) analyses
- surrogate spike recoveries
- internal standard responses.

The purpose of this review was to determine the completeness of the QA/QC checks and to determine whether procedures employed in the shipping and handling of the samples and internal procedures used by the analytical laboratory could have adversely affected the quality of the analytical data reported for any given sample. The results of the examination of these were incorporated into the data validation documentation and, where appropriate, applied through the use of data qualifiers to the data results.

2.4.3 Data Examination

Data examination consisted of reviewing the data generated by the analysts, the calculations which transformed the raw data into the final reported concentration data, reviewing the results of the internal standards, MS/MSD samples, and surrogate recovery analyses, and reviewing the results of the internal laboratory QA/QC analyses.

2.4.3.1 Review of Laboratory Data Analysis

The data were reviewed by the LEA Data Validation team to determine whether the analyses were performed in a manner consistent with the requirements of the DQOs of the project. The data reports were examined to determine whether data were of a quality consistent with the laboratory's interpretation. The off-site analytical laboratories were required to report tentatively

identified compounds (TICs), however none were reported during the Airport/Klondike Area investigations.

2.4.3.2 Review of Laboratory Analytical Procedures

For organic analyses, the gas chromatograph/mass spectrometer (GC/MS) instrument performance check data were also analyzed. This procedure consisted of determining the response of the system to standard compounds, including an evaluation of the instrument's initial calibration results, the instrument's continuing calibration results, and an ion-abundance check. The initial and continuing calibration checks indicated whether the instrument's internal standards produced relative response signals consistent with the expected responses from known external calibration standards. An initial calibration check is supposed to have been performed whenever any corrective actions are taken upon the instrument which may affect the instrumental response, or when the continuing calibration check data indicate that instrumental response is outside quality control acceptance limits (QCAL). In addition to the initial and continuing calibration checks, the results of the ion-abundance check were also reviewed. The ion-abundance check was conducted to indicate whether the GC/MS was performing properly (or "tuned") by comparing the results of ion abundance from the analysis of the method-specific tuning compound established ion abundance criteria.

A review of the results of the internal standards was conducted to determine whether:

- correct standards were used for the analytical method
- area counts and retention times for the standards are within QCAL
- samples are re-extracted/re-analyzed if QC checks fail.

Laboratory blanks, equipment blanks, and trip blanks were analyzed to assure the analysts that cross-contamination between samples does not occur. The review of laboratory blanks included checks for a sufficient number and frequency of the correct types of laboratory blank analyses, and a determination of any contaminants associated with the blanks. The laboratory blanks which may be associated with any given SDG include:

- method blanks which are analyzed to determine whether contamination could have been introduced during handling and sample preparation;
- storage blanks which are analyzed to determine whether contamination could have been introduced during sample storage; and,
- instrument blanks which are analyzed to determine whether contamination could have been introduced by ineffective instrumental purging between samples.

Surrogate compounds were spiked into all samples and the respective recoveries were reviewed to determine whether matrix interference effects were present by spiking a sample with a compound not normally present in the samples within an SDG. A review of the surrogate compound recoveries was performed to determine whether the recoveries were within QCAL. In general, surrogate recoveries are compared to prescribed recovery limits to determine acceptance.

The MS/MSD samples are samples spiked with specific target analytes. The MS/MSD samples are produced from a sample from each environmental matrix in each SDG. These samples were analyzed to determine matrix effects and the accuracy and precision of the analytical process. In general, the MS/MSD sample analytical data are reviewed to determine if:

- Field samples, not blanks, were selected for use as MS/MSD bases
- Field samples selected had relatively low detected concentrations of the spiked compounds
- Spiked compound recoveries were within QCAL
- Relative percent difference (RPD, equal to the difference between two values divided by their average expressed as a percentage) between positively detected, non-spiked compounds in the unspiked samples, MS and MSD was less than or equal to 50 percent.

The data review also included a review of the field duplicate, trip, and equipment blank samples submitted with the SDG. Field duplicate samples were intended to be submitted at the rate of approximately one field duplicate per twenty samples analyzed. In addition to reviewing the rate of submission of field duplicate samples, a relative precision of the analytical method was evaluated based on the reported concentrations of the detected constituents in the duplicate sample pair. In general, an acceptable RPD for aqueous samples was less than or equal to 30 percent; the acceptable RPD for non-aqueous samples was less than or equal to 50 percent. Specific descriptions of the trip and equipment blank submissions are presented in TM 15, *Quality Assurance/Quality Control Methods*.

2.4.3.3 Review of Laboratory Reporting

The review of the laboratory reporting involved reviewing the transcription of data, the proper application of data qualifiers, and the preparation and presentation of an appropriate data package. The data package also was reviewed for completeness. The review of the data package included a review of the appropriate application of qualifiers by the analysts, including logging of estimated concentrations and rejecting unacceptable results.

2.4.4 Data Qualification

Based upon the review of the data package using the guidelines presented herein, the LEA Data Validation team applied additional data qualifiers to the data. The additional data qualifiers included changing unqualified, detected and non-detected concentrations to “estimated,” and rejecting non-detected results based upon the failure of the laboratory to achieve one or more of the specific QA/QC objectives for each particular analyses.

These additional data qualifiers were applied to the data electronically, within the Site analytical database without altering (or requesting the laboratory alter) the data package. The Site analytical database is described below in Section 2.6.

2.4.5 Performance Evaluation Samples

In addition to the environmental samples collected at the Site, performance evaluation (PE) samples were also submitted to the analytical laboratories in order to gauge the laboratories analytical accuracy and precision independent of the laboratories’ internal QA/QC. The PE samples were either custom made specifically for the Site investigation activities under VCAP or were stock samples available from the PE sample vendor. All PE samples used in the investigation were made by Environmental Resources Associates of Arvada, Colorado. The selection of analytical constituents for the PES was based upon the most commonly encountered contaminants in the Airport/Klondike Area.

All PE samples were supplied with certified analytical data, these data were not submitted to the laboratory. However, the laboratory was aware that these samples were not standard because of the packaging. The data from PE sample analyses was verified and validated in the same manner as data from other samples within the SDG. However, the data from PE samples was also compared to the certified analytical data supplied with the PE samples. The PE sample results were compared to determine whether all of the compounds present, and only those compounds certified to be present, were detected, and whether the reported concentrations were within the acceptable range as specified by Environmental Resource Associates.

Data from the PE samples was used to determine the accuracy, precision, and internal QA/QC of each individual laboratory. The data were used to qualify or validate other data within an SDG. In some cases the analytical laboratory analyzed the PE samples separately, or on different analytical instruments, from the remainder of the SDG.

Because of the differences in the level of QA/QC associated with analytical data generated during different phases of the Airport/Klondike Area investigation, PE samples were not submitted to analytical laboratories until June 1997.

2.4.6 Data Validation Reporting

Based upon their review of the laboratory data package, the LEA Data Validation team generated a documentation consisting of a Tier II Data Validation Report for review by the project manager. A Tier II Data Validation Report consisted of documentation describing the results of the QC checks, the results of PE sample evaluations, and a summary of the data qualifiers applied to the data set as a result of the data validation process.

2.5 Data Management

Geologic, hydrologic, physical, and chemical data were generated during the various Site investigations. Availability of this data was critical to the later investigation activities. The procedures, personnel, and software used for inventory, control, storage, verification, and presentation of data were described in the VCAP Work Plan.

Procedures discussed in the VCAP Work Plan included those used for communication within the project team, focusing on the exchange of information among the field sampling team, data management team, Technical Task Leaders, Project Manager, and laboratories. The systems used to collect, store, and analyze the project data were generally as detailed in the VCAP Work Plan.

2.6 Database Repository

Analytical data were received from the laboratory in hard copy and electronic formats. The electronic copies were incorporated into the Site database for further evaluation and review. The electronic project information system is a dBASE® application, which is used for electronically managing sample information and analytical data. The database management functions employed during the investigation activities at the Site were previously presented in the VCAP Work Plan.

The database allows the retrieval of analytical data in a variety of formats and from selected areas, media, or based on other, user-selected, criteria. In addition, the data may be retrieved based on preset standards or baseline criteria in order to assist in determining compliance with regulatory guidelines.

3. RESULTS

This TM covers the techniques and methodologies used for the verification and validation of the analytical data generated during the course of the Site investigation activities. However, this TM does not cover the results of specific chemical analyses of soil, groundwater or surface water samples collected during the investigation and remediation activities as these data are discussed in the appropriate TMs and USTMs. This TM also does not cover the specific results of the data validation or verification exercises including the specific qualifiers applied to the analytical data.

However, the results of the data validation and verification exercises are used in the data presented in the various TMs and USTMs.

DRAFT

**TECHNICAL MEMORANDUM 13
SOIL VAPOR SURVEYING**

**SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
EPA ID No. CTD990672081**

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Drawing TM13-3 Soil Vapor Survey Locations, South Airport Area

Acronyms

FID	Flame Ionization Detector
H&A	Haley & Aldrich, Inc.
LEA	Loureiro Engineering Associates, Inc.
mg/l	milligrams per liter
µg/l	micrograms per liter
P&W	Pratt & Whitney
PID	Photoionization Detector
PPE	Personal Protective Equipment
QA/QC	Quality Assurance/Quality Control
SOP	Standard Operating Procedure
TM	Technical Memoranda
USTM	Unit-Specific Technical Memorandum
VOC	Volatile Organic Compound

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memorandum (TM) presents the methodology and results of the soil vapor surveying conducted in the Airport/Klondike Area (Site) of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut. Soil vapor surveys were performed as part of the Site investigation activities to provide an indication of the presence and relative magnitude and the distribution of volatile organic contaminants in the unconsolidated materials in various locations at the Site.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. Previous investigations at the Site performed from 1989 through 1993 resulted in the installation and sampling of soil borings, groundwater monitoring wells, and temporary wellpoints throughout the Airport/Klondike Area.

1.3 Scope

This TM covers the installation, sampling, and rationale for the soil vapor survey locations installed in the Airport/Klondike Area. The methods and techniques discussed are those used by Loureiro Engineering Associates, Inc. (LEA) in 1997, by Haley & Aldrich, Inc. (H&A) in 1992, and by TARGET Environmental Services, Inc. (TARGET) in 1989. This TM does not cover specific uses of soil vapor analytical data generated from the soil vapor surveying as these data are discussed in the appropriate Unit-Specific Technical Memorandum (USTM).

1.4 General Geologic and Hydrogeologic Conditions

The geologic and hydrogeologic characteristics of the Site are discussed in detail in the main body of this report. In general, the surficial materials in which the majority of the soil vapor survey points were completed, consist of medium to fine grained sands with trace levels of fine gravels and coarse sands. These sediments are generally post-glacial, fluvial deposits associated with the Connecticut River, although in many places the upper portion of these sediments have been anthropogenically disturbed during on-site construction activities. Beneath the fluvial sediments are glaciolacustrine sediments, primarily laminated silts and clays, associated with

glacial Lake Hitchcock. The basal sediment layer over most of the area is glacial till and stratified drift. Bedrock in the general East Hartford area consists of Triassic Age, interbedded arkoses and basalts. Bedrock in the area has a general slight dip eastward cut by widespread steep faults.

The regional drainage basin is the Upper Connecticut River Basin. Regional flow in the unconsolidated materials in this part of the basin is to the west, towards the Connecticut River. Local groundwater flow is also controlled to some extent by local drainage sub-basins and topography. The upper portion of the unconsolidated sediments serves as the primary aquifer in the area. Groundwater flow in the bedrock is primarily within fractures and fault planes, and to a lesser extent within the rock matrix. The local bedrock aquifer would be adequate as a residential water supply source, but groundwater yields are typically too low to be of commercial or industrial use.

1.5 Soil Vapor Surveying Locations and Rationale

Three soil vapor surveys have been completed at the Site over the course of the environmental investigations associated with the Airport/Klondike Area. These soil vapor surveys were completed both as part of investigations of the soil quality in specific environmental units and areas to support subsequent soil boring/monitoring well installations programs. Soil vapor surveys were conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area in 1989; the Former Soil Pile Area of the South Airport Area in 1992; and the former Silver Lane Pickle Company Area of the North Airport Area in 1997. These soil vapor surveys were located based on historical information regarding Site operations, field observations made during numerous Site walkovers and visits, and information gathered during other phases of the environmental investigation of the Site. Historical operations have been compiled in various reports, deduced from aerial photographs, engineering drawings and plans, and reported in various P&W internal memoranda. More details on historical operations are included in the main body of this report as well as in the USTMs.

2. METHODOLOGY

This section presents the methods and techniques used to conduct soil vapor surveys at the Site. These methods were those used by LEA, H&A, and TARGET to conduct their respective investigations. The LEA soil vapor survey was conducted in the vicinity of the former Silver Lane Pickle Company in the North Airport Area. The locations of the soil vapor survey points are shown on Drawing TM13-1. The H&A soil vapor survey was conducted in the South Airport Area as a preliminary investigation for the RCRA closure of the Former Soil Pile Area. The TARGET soil vapor survey was conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area.

2.1 General Procedures

Soil vapor surveys in the Airport/Klondike Area have been completed in various locations to support subsequent soil boring/monitoring well installations programs. This TM describes the general procedures that were used during the completion of soil vapor surveys at the Site. Also discussed are any variations and exceptions to the general methodology and the reasons why these variations and exceptions were required.

The soil vapor surveying completed by LEA during the most recent investigation activities were in general accordance with the procedures described in LEA Standard Operating Procedures (SOP) *Standard Operating Procedure for Soil Vapor Surveying*. Soil vapor surveys conducted by other contractors have been conducted under their respective standard procedures and are referenced in the appropriate reports.

2.2 Soil Vapor Probe Installation Methods

Soil vapor surveys were initiated by locating the proposed soil vapor survey points by LEA field personnel. After the proposed soil vapor survey points were located, an auger hole was advanced through pavement or other restrictive layer, if appropriate. After the auger hole was completed, a pilot hole was drilled and/or punched to a depth of approximately 6-inches shallower than the proposed depth of the soil vapor point.

After the pilot hole was completed, the soil vapor probe was inserted into the pilot hole and driven into undisturbed sediments. The soil vapor probe consisted of a portion of stainless steel

tubing to which is fitted a sampling tip. The vapor sampling tip consisted of a short, approximately 2-inch long, stainless steel tubing punctured by small holes, fitted at the top and bottom with larger-diameter, stainless-steel blank sections each approximately 2 inches long. The top of the vapor probe was fitted with a vapor-tight Swagelok® connector to allow coupling of the vapor probe to the appropriate tubing. The larger-diameter, stainless-steel blank sections provided slightly over-sized sections to seal-off the hole around the perforated portion of the vapor probe.

After the vapor probe had been driven to depth, the pilot hole opening was sealed to prevent flow of ambient air into the vapor probe. The pilot hole was typically sealed using a modeling clay which provided an impermeable material, could be molded to fit the pilot hole opening and shaped snugly against the vapor probe. Once the soil vapor probe was installed in the hole and the hole sealed, the probe was attached to the sampling apparatus and sampling was commenced.

2.3 Vapor Sampling Methods

Soil vapor samples collected from vapor probes were collected in general accordance with the procedures described in the LEA SOP *Standard Operating Procedure for Soil Vapor Surveying*. Soil vapor sampling procedures were similar for all sampling locations.

Once the soil vapor probe was installed in the pilot hole, the probe was attached to the sampling apparatus by one of two methods. In the North Airport Area, having relatively low levels of contamination, the vapor probe was attached to Tygon® tubing. The Tygon® tubing was attached directly to the sampling system. The sampling system consisted of an air pump and a flow meter with the appropriate valves for controlling vapor flow through the system. After the system was connected, the probe was purged of a minimum of three volumes of vapor.

After purging, a sample of soil vapor was collected into a Tedlar® bag for subsequent laboratory analysis. After the Tedlar® bag was filled, the bag was transferred to a chilled cooler to await field analysis. Field analysis was performed using a portable flame ionization detector (FID); only field screening of the soil vapor samples was performed by LEA. The purpose of the field analysis was to provide a qualitative measure of the presence and location of contamination in the subsurface. The field data were subsequently used to guide a focused soil boring program, rather than to provide a quantitative measure of any subsurface contamination.

In the event that additional soil vapor samples were desired from the current location, the probe was manually advanced to the next target depth. If manually advancing the probe was not

possible due to the nature of the subsurface materials, the probe was extracted from the pilot hole and the pilot hole advanced in the manner described in Section 2.2.

2.4 Analytical Parameters

Analytical parameters for soil vapor samples collected by LEA from the North Airport Area were total ionizable volatile organic compounds (VOCs). Specific contaminants of concern were not chosen because the field data were subsequently used in a qualitative manner to guide a focused soil boring program, rather than to provide a quantitative measure of any subsurface contamination.

2.5 Quality Assurance/Quality Control Procedures

Because of the qualitative nature of the field analyses performed on the soil vapor samples collected by LEA, no quality assurance samples were collected. The was field calibrated FID in accordance with the vendor directions to provide a response of total ionizable VOCs relative to methane.

2.6 Pilot Hole Abandonment

After the completion of soil vapor sampling, the vapor probe was extracted from the pilot hole and the pilot hole was allowed to collapse. Where necessary, the pilot hole was backfilled with bentonite to the ground surface.

2.7 Historical Soil Vapor Surveys

Two of the three soil vapor surveys that have been completed at the Site over the course of the environmental investigations associated with the Airport/Klondike Area have been historical investigations associated with the Airport/Klondike Area. These historical soil vapor surveys were completed both as part of investigations of the soil quality in specific environmental units and areas to support subsequent soil boring/monitoring well installations programs.

2.7.1 TARGET Environmental Services Soil Vapor Survey

In 1989, TARGET conducted a soil vapor survey from December 11 to December 14, 1989, in the Airport/Klondike Area. The soil vapor survey was conducted at the request of Westinghouse Environmental and Geotechnical Services, Inc. as part of the Preliminary Reconnaissance Survey completed in 1990. The soil vapor survey was conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North

Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area. The locations of the soil vapor survey points are shown on Drawing TM13-2. A summary of analytical data from this soil vapor survey is presented in Tables TM13-1a and TM13-1b.

The soil vapor surveying method used by TARGET was generally similar to the methods employed by LEA. At each soil vapor surveying location an auger hole was drilled through pavement, if present. A 0.5-inch pilot hole was driven to a depth of approximately 4 feet using a manually-driven slam hammer. According to the TARGET Environmental Services report (Target, 1989):

“The entire sampling system was purged with ambient air drawn through an organic vapor filter cartridge, and a stainless steel probe was inserted to the full depth of the hole and sealed off from the atmosphere. A sample of in-situ soil gas was then withdrawn through the probe and used to purge atmospheric air from the sampling system. A second sample of soil gas was withdrawn through the probe and encapsulated in a pre-evacuated glass vial at two atmospheres of pressure (15 psig). The self-sealing vial was detached from the sampling system, packaged, labeled, and stored for laboratory analysis.

“Prior to the day’s field activities all sampling equipment, slide hammer rods, and probes were decontaminated by washing with soapy distilled water and rinsing with distilled water. Internal surfaces were flushed dry using pre-purified nitrogen, and external surfaces were wiped clean using clean paper towels.

Field control samples were collected at the beginning and end of each day’s field activities and after every twentieth soil gas sample. These QA/QC samples were obtained by inserting the probe tip into a tube flushed by a 20 psi flow of pre-purified nitrogen and collecting in the same manner as described above.”

The soil vapor samples collected by TARGET were analyzed according to two analytical methods. The first analytical method was EPA Method 601 on a gas chromatograph equipped with an electron capture detector, but using direct injection instead of purge and trap. A summary of analytical data from this soil vapor survey for this method is presented in Table TM13-1a. The analytical parameters, and their associated detection limits were:

1,1-Dichloroethylene	1.0 µg/l
Methylene chloride	1.0 µg/l

trans-1,2-Dichloroethylene	1.0 µg/l
1,1-Dichloroethane	1.0 µg/l
Chloroform	0.1 µg/l
1,1,1-Trichloroethane	0.1 µg/l
Carbon tetrachloride	0.05 µg/l
Trichloroethylene	0.1 µg/l
1,1,2-Trichloroethane	0.1 µg/l
Tetrachloroethylene	0.05 µg/l
1,1,2,2-Tetrachloroethane	0.05 µg/l

The second analytical method was EPA Method 602 on a gas chromatograph equipped with an flame ionization detector, but using direct injection instead of purge and trap. A summary of analytical data from this soil vapor survey for this method is presented in Table TM13-1b. The analytical parameters, and their associated detection limits were:

Methyl- <i>t</i> -butyl ether	1.0 µg/l
Benzene	1.0 µg/l
Toluene	1.0 µg/l
Ethylbenzene	1.0 µg/l
m- and p-Xylene	1.0 µg/l
o-Xylene	1.0 µg/l

In addition to the above sets of analyses, a summary measure of the relative degree of contamination in a particular soil vapor sample was calculated. An FID Total Volatiles value was derived from summation of the chromatogram areas from all EPA Method 602 series compounds based on the instrument response factor for toluene. The summary measure provides a relative measure of the total concentration of hydrocarbon contaminants present in a given soil vapor sample.

2.7.2 Haley & Aldrich, Inc. Soil Vapor Survey

On August 18, 1992, H&A conducted a soil vapor survey in the South Airport Area as a preliminary investigation for the RCRA closure of the Former Soil Pile Area. The soil vapor survey was performed to provide preliminary information regarding the possibility of performing a clean closure on the area. A total of eleven soil vapor locations, SA-SV-01 through SA-SV-11, were sampled for VOCs during this investigation. The locations of the soil vapor survey points are shown on Drawing TM13-3. A summary of analytical data from this soil vapor survey is presented in Table TM13-2.

The soil vapor survey and sample analyses were conducted in the following manner (H&A, 1992):

“Soil vapor samples were collected at designated stations, from one or more depths between 2.5 and 8.0 ft. Specific VOCs were sought, which included 1,1-dichloroethylene, 1,2-dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene, benzene, toluene, ethyl benzene, and xylenes. Instrument calibration was performed using mixed standards containing the specific analytes.

At each soil vapor sampling station, a sampling tube composed of 2.5 ft. long steel-pipe sections, joined by threaded connectors was driven to the desired depth using the percussion mode of the drill. Vapors were drawn from the adjacent soil voids into the tube, through slots in the bottom pipe-section, using a vacuum pump. After approximately two minutes of pumping, a sample of the soil vapor was collected with a syringe, at a sampling port on the tube. The sample was then injected into the GC for analysis.

The drill bit and sampling tube were washed between [sic] sampling stations by laboratory-soap scrub, a tap water rinse, a methanol rinse and a final tap water rinse. The syringe was purged with hydrocarbon-free air to remove prior-sample residue. Sampling tube and syringe blanks were analyzed between [sic] samples to verify that sampling equipment was not contaminated.

A Photovac Model 10S gas chromatograph was used for the analyses, under the following instrument conditions:

Detector	- 10.6 eV Photoionization Detector
Oven Temperature	- 40° C, isothermal
Carrier Gas and Flow Rate	- Hydrocarbon-free air, 7.5 ml/min
Column	- Cpsil 5CB, capillary

The GC was calibrated at the beginning of the field day by injecting a headspace sample from atop aqueous standards containing known concentrations of the VOCs in solution. The instrument determines peak retention times (times elapsed between sample injection and peak appearances). Peak areas are integrated by the GC microprocessor. A response factor (the ratio of analyte concentration in the standard to chromatogram peak area), is calculated by the operator for each

analyte. Standards were re-analyzed several times during the day to verify response factors and to recalibrate with respect to retention times.

A peak on a sample chromatogram is judged to correspond to a peak on a calibration chromatogram if respective retention times were within one second of each other. Similarities in calibration peak and sample peak shapes were also considered in identifying compounds. Concentrations of the VOCs sought are calculated by multiplying the peak areas on sample chromatograms by the corresponding response factors.”

2.8 Decontamination of Materials and Equipment

The purpose of consistent decontamination procedures was to prevent the potential spread of contamination between soil vapor survey locations and samples. All equipment and materials placed into a soil vapor survey pilot hole, or associated with the collection and sampling of soil vapor, were decontaminated prior to initiating the sampling and between individual samples, as appropriate. Where possible dedicated soil vapor probes were used during a given soil vapor surveying event to minimize the need for field decontamination of equipment. The decontamination procedures used by LEA personnel are presented in the LEA SOP *Standard Operating Procedure for Soil Vapor Surveying*.

When the use of dedicated soil vapor probes was not possible, sampling equipment, such as soil vapor probes, were decontaminated between uses in the field at the soil vapor surveying site. Manual decontamination took place at the sampling site using a portable decontamination system, consisting of a small, portable trough to contain over-spray and potentially spilt decontamination fluids, and decontamination solutions in individual 5-gallon buckets, or spray containers, as appropriate. The sampling equipment was decontaminated using the following procedure:

- Brush off gross soil particles.
- Wash and scrub equipment with phosphate-free detergent.
- Rinse equipment with deionized water.
- Rinse equipment with dilute nitric acid solution.
- Rinse equipment in deionized water.
- Rinse equipment with dilute methanol/water solution.
- Rinse equipment in deionized water.
- Allow equipment to air dry.

The decontamination fluids were maintained in 5-gallon buckets during use, and transferred to 55-gallon drums for disposal by P&W. The decontamination of soil vapor sampling equipment used by other contractors is discussed in Section 2.7.

2.9 Soil Vapor Survey Point Location Identifiers

Soil vapor sampling locations, as well as monitoring wells, piezometers, test pits, stream gauges, surface water and sediment sampling locations, and soil borings, have been provided with location identifiers using a systematic method to prevent duplication of location identifiers. However, historic soil vapor sampling locations have not always been identified using this identifier method. The system of location identifiers provides a relatively easy means of finding the referenced locations on Site maps. All parts of the P&W East Hartford facilities, including the Andrew Willgoos Gas Turbine Laboratory, the Colt Street facility, and the Main Street facility, have been divided into twenty-nine study areas. Each of the study areas has been assigned two-letter identifiers based upon the common name for the area. These two-letter designations are presented in Table TM13-3.

In addition, each type of sampling location has been assigned a two-letter designation to identify the major sample type for a given sampling location. The two-letter designations for the various types of sampling locations are also presented in Table TM13-3. Because of the large areas involved, the study areas that encompass the Airport/Klondike Area include the North and South Airport Areas and the North and South Klondike Areas. All monitoring and sampling locations have been given a location identifier based on their location in the Airport/Klondike Area, the type of sampling or monitoring location, and finally a sequential numeric identifier based upon the specific type of location. All soil vapor sampling locations are presented on Drawings TM13-1 through TM13-3.

2.10 Waste Management

All spent decontamination fluids generated during soil vapor sampling activities, were placed in 55-gallon, closed-top drums supplied by P&W for subsequent off-site disposal by P&W. The drums were labeled, the sampling locations contributing to each were listed, and the information tracked to aid in waste characterization and disposal. In general, the drilling of the pilot holes for soil vapor sampling did not generate waste soil requiring disposal.

2.11 Health and Safety

LEA field personnel conducted field activities in accordance with the LEA Site Health and

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Safety Plan that was prepared for all of the investigation activities performed at the Site. In general, soil vapor sampling was conducted in modified Level D personal protective equipment (PPE) consisting of safety glasses, surgical or nitrile gloves, steel-toed shoes, and hard hats. Other contractors employed as subcontractors operated in accordance with their specific health and safety plans.

3. RESULTS

The soil vapor survey performed by LEA in the former Silver Lane Pickle Company Area of the North Airport Area was conducted on a qualitative basis. The survey was conducted to determine the potential presence of contaminants in the subsurface resulting from the former underground storage tanks reported to have been used by the Pickle Company and to direct additional focused soil boring investigations in the area. The results of this soil vapor survey are presented on Drawing TM13-1. The results of LEA's soil vapor survey indicated the presence of VOCs to the north and the east of the former gas pumps associated with the former Silver Lane Pickle Company.

The soil vapor survey conducted in 1992 in the Former Soil Pile Area of the South Airport Area was conducted to determine the presence of VOCs and guide closure activities on these units. The results indicated the presence of relatively low concentrations of VOCs in soil vapor at locations across the northern and central portions of the area.

The soil vapor survey conducted as part of the Preliminary Reconnaissance Survey in 1989 was performed in the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area. A variety of VOCs were detected in the soil vapor samples collected from these areas. Data from this investigation were subsequently used to direct soil boring and monitoring well installations during the Preliminary Reconnaissance Survey. A variety of VOCs were reported in the soil vapor samples collected in these areas. The highest concentrations were detected in the VPSA Area, and sporadic, relatively low concentrations of VOCs were detected in the remaining areas surveyed.

The soil vapor data collected during 1989 was quantitatively and qualitatively analyzed. All of the soil vapor probes installed by TARGET during the 1989 investigations were advanced to 4 feet. However, because of the shallow depth to groundwater in the South Klondike Area (in places less than four feet) and the degree of contamination present in the groundwater, the value of the soil vapor data in delineating soil contamination was considered to be limited. As such, although the data provided a qualitative indication of the presence of contamination, the data were never considered quantitatively accurate and were not used.

REFERENCES

Haley & Aldrich, Inc., October 1992, *RCRA Closure Plan for Former Storage Area at the South Airport Area*.

TARGET Environmental Services, Inc., 1989, *Soil Gas Survey, United Technologies Corporation, Klondike Area, East Hartford, Connecticut*.

Westinghouse Environmental and Geotechnical Services, Inc. 1990, *Preliminary Reconnaissance Survey of the Klondike Area*, Pratt & Whitney, East Hartford, Connecticut, unpublished report for Pratt & Whitney.

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TABLES

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
C1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.25	<0.05	2.4	<0.10	12	<0.05
C2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.11	<0.05
C3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	1.2	<0.05	0.47	<0.10	0.38	<0.05
C4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	0.16	<0.05
C5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.31	<0.05
C6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.17	<0.05
FA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.55	<0.05
FA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	0.40	<0.05
FA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.36	<0.05
FA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.27	<0.05
FA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.44	<0.05
FA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.19	<0.05	<1.0	<0.10	0.38	<0.05
FA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.23	<0.05
FA9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.32	<0.05
FB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.58	<0.05	<1.0	<0.10	0.86	<0.05
FB5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
FB6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB10	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
L1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.13	<0.05
L2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.30	<0.05
L3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.19	<0.05	<1.0	<0.10	0.16	<0.05
L4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.22	<0.05
L5	µg/l	2.2	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.27	<0.05
L6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	0.14	<0.05
Q1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.26	<0.05
SA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.33	<0.05	<1.0	<0.10	0.51	<0.05
SA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.07	<0.05
SA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.12	<0.05	<1.0	<0.10	<0.05	<0.05
SA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
SA7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
SC7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	0.22	<0.05	<0.05
SC8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SE3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	4.0	<0.05
SE4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.18	<0.05	<1.0	<0.10	<0.05	<0.05
SE7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SF1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SF2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	20	<0.05
SF3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	0.18	<0.10	0.52	<0.05
SF4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.26	<0.05
SF5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	<0.05	<0.05
SG2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
SG4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SG6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SH1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SH2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	<0.05	<0.05
SH3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.18	<0.05	<1.0	<0.10	<0.05	<0.05
SH4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SH5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SJ1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SJ2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
SJ3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	1.4	<0.05
SJ4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	<0.05	<0.05
SK2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	<0.05	<0.05
SL1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SL3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SL7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	<0.05	<0.05
T3141	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.37	<0.05
T3142	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	0.29	<0.05
T3143	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.20	<0.05
T3144	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.11	<0.05
TD1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	1.3	<0.05
TD2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	1.4	<0.05
TD3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	3.0	<0.05
VP1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP6	µg/l	<1.0	<1.0	<1.0	<1.0	4.5	<0.10	0.44	<0.05	<1.0	<0.10	<0.05	<0.05
VP7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
VP8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP10	µg/l	<1.0	<1.0	<1.0	<1.0	10	<0.10	46	<0.05	0.20	<0.10	1.4	<0.05
VP11	µg/l	24	<1.0	<1.0	<1.0	<1.0	<0.10	0.31	<0.05	0.44	<0.10	57	<0.05
VP12	µg/l	14	<1.0	<1.0	<1.0	33	<0.10	>205	<0.05	>370	1.5	>349	<0.05
VP13	µg/l	289	<1.0	<1.0	<1.0	<1.0	<0.10	0.22	<0.05	0.14	<0.10	20	<0.05
VP14	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	0.38	0.74	<0.05	0.20	<0.10	29	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
VP15	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	4.2	<0.05
VP16	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	8.9	<0.05
VP17	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	3.4	<0.05
VP18	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	2.6	<0.05
VP19	µg/l	428	<1.0	<1.0	<1.0	18	0.32	>214	<0.05	152	<0.10	>312	<0.05
VP20	µg/l	5.0	<1.0	<1.0	<1.0	<1.0	<0.10	3.7	<0.05	1.5	<0.10	139	<0.05
VP21	µg/l	15	<1.0	<1.0	<1.0	37	<0.10	124	<0.05	28	<0.10	180	<0.05

Abbreviations:

11DCE: 1,1-Dichloroethylene
MC: Methylene Chloride
TDCE: trans-1,2-Dichloroethylene
12DCA: 1,2-Dichloroethane
11DCA: 1,1-Dichloroethane
CFM: Chloroform

111TCA: 1,1,1-Trichloroethane
CTC: Carbon tetrachloride
TCE: Trichloroethylene
112TCA: 1,1,2-Trichloroethane
PCE: Tetrachloroethylene
1122TTCA: 1,1,2,2-Tetrachloroethane

Table TM13-1b TARGET Environmental Services, Inc. Soil Vapor Survey Summary Results								
Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
C1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8
C2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.1
FA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15
FA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB10	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	33
L6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

<p align="center">Table TM13-1b TARGET Environmental Services, Inc. Soil Vapor Survey Summary Results</p>								
Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles*
Q1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA1	µg/l	<1.0	<1.0	8.3	2.2	<1.0	1.9	264
SA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	32
SA3	µg/l	<1.0	<1.0	<1.0	3.2	1.9	2.8	157
SA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10
SE2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11
SE3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.1
SF3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	35
SF5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	44

Table TM13-1b
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
SG1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	25
SH5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table TM13-1b
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
T3141	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3142	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3143	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3144	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	24
VP7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP10	µg/l	<1.0	<1.0	132	4.4	27	20	1,092
VP11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.5
VP12	µg/l	<1.0	1.5	5.9	11	7.2	5.2	3,111
VP13	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.7
VP14	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	58
VP15	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP16	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP17	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP18	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP19	µg/l	<1.0	1.7	8.7	47	54	29	5,029
VP20	µg/l	<1.0	<1.0	<1.0	1.7	2.7	1.6	149
VP21	µg/l	<1.0	<1.0	2.7	9.5	10	6.8	1,278

^a Total Volatiles calculated using the sum of the areas of all integrated chromatogram peaks and the instrument response factor for toluene.

Table TM13-2
Haley & Aldrich, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Depth (Ft.)	11DCE	12DCE ^a	TCA	TCE	PCE	Benzene	Toluene	Ethyl benzene	Xylenes
SA-SV-01	2.5 - 3.0	ND<1	4	ND<3	ND<1	9	ND<1	1	ND<1	ND<1
SA-SV-02	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	11	ND<1	ND<1	ND<1	ND<1
SA-SV-03	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	2	ND<1	ND<1	ND<1	ND<1
SA-SV-04	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-05	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	2	ND<1	ND<1	ND<1	ND<1
SA-SV-06	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-07	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-08	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-09	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-10	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-11	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1

Notes:

^a The concentrations reported for 1,2-Dichloroethylene represent a sum of cis-1,2-Dichloroethylene and trans-1,2-Dichloroethylene

The concentrations reported are in terms of concentrations of VOC in an aqueous standard that would generate the observed level of VOC vapor in headspace above the standard.

Abbreviations:

11DCE: 1,1-Dichloroethylene
MC: Methylene Chloride
TDCE: trans-1,2-Dichloroethylene
12DCA: 1,2-Dichloroethane
11DCA: 1,1-Dichloroethane
CFM: Chloroform

111TCA: 1,1,1-Trichloroethane
CTC: Carbon tetrachloride
TCE: Trichloroethylene
112TCA: 1,1,2-Trichloroethane
PCE: Tetrachloroethylene
1122TTCA: 1,1,2,2-Tetrachloroethane

Table TM13-3
Area and Sampling Type Identifiers
Pratt & Whitney, East Hartford, Connecticut

Area Designation	Area	Sampling Type Identifier	Explanation
AB	Within A Building	MW	Monitoring Well
BB	Within B Building	PZ	Piezometer
CB	Within C Building	SW	Surface Water
DB	Within D Building	SD	Sediment
EB	Within E Building	CC	Concrete Chip
FB	Within F Building	SS	Surface Soil
GB	Within G Building	SB	Soil Boring
HB	Within H Building	TP	Test Pit
JB	Within J Building	SV	Soil Vapor
KB	Within K Building		
LB	Within L Building		
MB	Within M Building		
CS	Colt Street Facility		
EA	Engineering Area		
ET	Experimental Test Airport Laboratory		
LM	Area Outside Buildings L and M		
NA	North Airport Area		
NT	North Test Area		
NW	North Willgoos Area		
PH	Powerhouse Area		
SA	South Airport Area		
SK	South Klondike Area		
ST	South Test Area		
SW	South Willgoos Area		
WT	Waste Treatment Area		
XT	Experimental Test Area		

DRAWINGS

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**SOIL VAPOR SURVEY LOCATIONS SOUTH AIRPORT
AREA**

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February 3, 1999

US Environmental Protection Agency
JFK Federal Building (HBT)
1 Congress Street
Boston, MA 02114

Attn.: Juan Perez

RE: Summary Investigation and Remediation Report - Airport/Klondike Area
Pratt & Whitney, East Hartford, Connecticut
LEA Comm. No. 68VG401

Dear Mr. Perez:

Attached please find copies of additional information for the above-mentioned report for the Airport/Klondike Area at the Pratt & Whitney facility located at 400 Main Street in East Hartford, Connecticut. The information provided in this package includes the following:

- Technical Memorandum (TM) 12 Geophysical Surveying (New)
- Technical Memorandum (TM) 13 Soil Vapor Surveying (New)

The information identified as "New" has not been previously submitted for review. These TMs have been added to Volume IV of the Technical Memoranda Binders.

If you have any questions or comments concerning the attached information, please contact me at 860-747-6181.

Sincerely,

LOUREIRO ENGINEERING ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "T. Salimeno", with a long horizontal flourish extending to the right.

Thomas J. Salimeno, P.E.
Project Manager

Attachments

pc: V. Riva, Pratt & Whitney

DRAFT

**TECHNICAL MEMORANDUM 12
DATA VALIDATION PROCEDURES**

**SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
EPA ID No. CTD990672081**

Prepared for:

**PRATT & WHITNEY
400 Main Street
East Hartford, Connecticut 06108**

Prepared by:

**LOUREIRO ENGINEERING ASSOCIATES
100 Northwest Drive
Plainville, Connecticut 06062**

LEA Comm. No. 68V8124

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Acronyms

ACC	Accutest Laboratories
AEL	Averill Environmental Laboratory, Inc.
CLP	Contract Laboratory Program
DEP	State of Connecticut Department of Environmental Protection
DPH	State of Connecticut Department of Public Health
EPA	Environmental Protection Agency
ESC	Environmental Sciences Corporation
DQO	Data Quality Objectives
GC	Gas Chromatograph
GC/MS	Gas Chromatograph/Mass Spectrometer
IDL	Instrument Detection Limit
LAN	Lancaster Laboratories, Inc.
LEA	Loureiro Engineering Associates, Inc.
MDL	Method Detection Limit
MSA	Method of Standard Additions
MS/MSD	Matrix Spike/Matrix Spike Duplicate
P&W	Pratt & Whitney
PE	Performance Evaluation
QA/QC	Quality Assurance/Quality Control
QCAL	Quality Control Acceptance Limit
QNT	Quanterra, Inc.
RL	Reporting Limit
RPD	Relative Percent Difference
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SOP	Standard Operating Procedure
TICs	Tentatively Identified Compounds
TM	Technical Memorandum
USTM	Unit-Specific Technical Memorandum
VCAP	Voluntary Corrective Action Program
VOA	Volatile Organic Analysis

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memorandum (TM) presents the techniques and methodology used to validate the analytical laboratory data from soil, groundwater, and surface water samples collected from the Airport/Klondike Area (Site) of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut.

Soil, groundwater and surface water samples have been collected during various environmental Site investigations by different environmental consultants. Over the course of these investigations, different analytical laboratories have been used. The analytical laboratories used have included Accutest Laboratories, Inc. (ACC) of Dayton, New Jersey; Ceimic Corporation (Ceimic) of Narragansett, Rhode Island; Environmental Sciences Corporation (ESC) of Wallingford, Connecticut; Averill Environmental Laboratory, Inc. (AEL) of Plainville, Connecticut; Lancaster Laboratories, Inc. (LAN) of Lancaster, Pennsylvania; and Quanterra Environmental Services, Inc. (QNT) Laboratory of North Canton, Ohio. These laboratories have generated analytical data reports with varying levels of supporting documentation depending upon the needs of the specific investigation, the requirements of the specific environmental consultant, and the general reporting standards employed at the time the investigation was performed.

As a result of the different levels of documentation provided, differing levels of data verification and data validation have been performed. In general, as the maturity of the Site investigation has increased, so has the level of documentation provided by the analytical laboratories. This increased level of documentation is the result both of progressive changes in the level of documentation requested and the refinement of environmental analytical data reporting. More specifically, the level of data verification also increased with P&W's participation in the Voluntary Corrective Action Program (VCAP).

In addition to the off-site analytical laboratories, Loureiro Engineering Associates, Inc. (LEA) operated an analytical laboratory to provide screening analytical data that was used to assist in site investigation activities of the Airport/Klondike Area. The laboratory's function was to perform expedited analyses of samples to support the field sampling activities and to aid in the selection of samples that were submitted to fixed off-site laboratories for more comprehensive analysis. Because the data from the LEA Analytical Laboratory was considered screening data, these data were not validated but were qualified by the analytical chemist at the time the analyses

were performed. Furthermore, a second level of verification and review was provided by the laboratory manager before the release of the final data report.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. During the Site investigation and remediation activities performed by LEA, soil and groundwater samples collected as part of the contaminant delineation investigations have been submitted to selected commercial environmental analytical laboratories for analysis.

1.3 Scope

This TM covers the techniques and methodologies used for the verification and validation of the analytical data generated by ACC, LAN, and QNT. However, this TM does not cover the results of specific chemical analyses of soil, groundwater or surface water samples collected during the investigation and remediation activities as these data are discussed in the appropriate TMs and the Unit-Specific Technical Memoranda (USTMs). This TM also does not cover the specific results of the data validation or verification exercises. The specific qualifiers applied to the analytical data are not enumerated in this TM. However, the results of the data validation and verification exercises are used in the data presented in the various TMs and USTMs.

2. METHODOLOGY

This section presents the methods and techniques used to verify and validate the analytical laboratory data for the soil and groundwater samples submitted to ACC, LAN, and QNT. Methods used to collect, transport, and manage soil, ground water and surface water samples collected during the Site investigation are discussed in the LEA Standard Operating Procedures (SOPs) *Standard Operating Procedure for Geoprobe® Probing and Sampling*, *Standard Operating Procedure for Geologic Logging of Unconsolidated Sedimentary Materials*, *Standard Operating Procedure for Hollow Stem Auger Borings*, *Standard Operating Procedure for Monitoring Well Installation*, and *Standard Operating Procedure for Soil Sampling*. More specific details on the monitoring well installation and the soil boring installation are included in *TM 1 Monitoring Well Installation and Development and Soil Sampling* and *TM 5 Soil Boring Installation and Soil Sampling*, respectively.

Groundwater samples were collected from permanent monitoring wells or by using Geoprobe® Screen-Point groundwater sampling techniques during the installation of soil borings throughout the Airport/Klondike Area. Groundwater samples were collected in general accordance with the LEA SOP *Liquid Sample Collection and Field Analysis*. More specific details on the groundwater sampling are included in *TM 3 Groundwater Sampling and Quality*.

Surface water samples were collected from permanent surface water sampling locations throughout the Airport/Klondike Area. Surface water samples were collected in general accordance with the LEA SOP *Liquid Sample Collection and Field Analysis*. More specific details on the groundwater sampling are included in *TM 6 Surface Water and Sediment Sampling*.

2.1 Purpose and Objectives of Data Validation

The objectives of the data validation process were to assess and summarize the quality, technical validity, and defensibility of the analytical data. By reviewing the analytical data, including the raw data as necessary, the internal laboratory quality control procedures and results, and the physical handling and preparation of the environmental samples, the data validators quantify the errors associated with a given measurement or result.

In general, measurement errors associated with environmental samples may be divided into analytical errors and sampling errors. Analytical errors are those errors associated with the measurements made in the laboratory, including those due to data discrepancies and poor

laboratory practices. Analytical errors also include those errors of measurement due to matrix effects associated with the sample/analytical method combination. Sampling errors are those errors associated with the procurement, sampling procedures, and handling of the sample including the use of contaminated equipment, improper storage, handling, or preservation, the use of improper sample containers, and inappropriate sampling techniques.

The data validation process is designed to provide a framework through which the various aspects of measurement error may be evaluated and quantified. Once the analytical data are properly qualified, the data are more defensible and more useful for evaluating the conditions at a site. Additionally, discrepancies in sample collection, handling, preservation and transport, as well as potentially poor laboratory practices may be discerned and re-evaluated as appropriate.

2.2 General Procedures

This section describes the general procedures and methodologies used to verify and validate soil and groundwater analytical data supplied by ACC, LAN, and QNT. Data from other analytical laboratories was generally not validated because these laboratories were used during earlier phases of the investigation prior to the determination of the current data quality objectives associated with the VCAP.

During the course of the site investigations at the Airport/Klondike Area, soil and groundwater samples were routinely collected for analytical laboratory analyses. Because of the number of soil samples collected and the need to provide a cost-effective, but nonetheless adequate, number of analyses, LEA adopted a strategy of submitting all soil samples to the off-site analytical laboratories “on hold.” LEA requested that the laboratories hold the samples until further notified as to which samples would be analyzed and what analyses were to be performed. Aliquots of all soil samples were submitted to the LEA Analytical Laboratory for analysis for screening VOCs. The results from the LEA Analytical Laboratory and the associated field headspace screening, as well as any visual or olfactory evidence documented by the sampler, in conjunction with information on the potential release area were then used to choose selected soil samples for analysis. The choice of analyte suites for each sample was made on the basis of the potential contaminants associated with the specific environmental unit and any sample-specific information obtained during the investigation.

The result of this soil sample submission practice was that chain-of-custodies often did not state the analyses performed on specific samples, or whether or not analyses were performed. A separate sample analysis request form was sent to the analytical laboratory by facsimile and a

copy of the form retained in the project documentation notebook. This sample analysis request form was subsequently incorporated into the data package.

Groundwater and surface water samples were generally submitted directly to the analytical laboratory for specific analyses, rather than being screened. This was due to the nature of contaminants in aqueous matrices, the types of analyses being requested, and the general nature of aqueous samples.

2.3 Data Verification

The objective of data verification was to ensure the agreement between analytical data reported by the laboratory, in hard-copy and electronic formats, and the analytical data requested. Data verification entailed the comparison of the analytical data and laboratory reports received from the analytical laboratory with the data reports generated by the electronic database.

An initial review of data obtained from field measurements was performed by the Field Task Leader. This review consisted of checking procedures utilized in the field, ensuring that field measurement instruments were properly calibrated, verifying the accuracy of transcriptions, and comparing data obtained in the field to historic measurements where appropriate.

An internal review of analytical data was the responsibility of project management and data validation personnel. The laboratory analyst initiated the data review process by examining and accepting the data. The completed data package was then reviewed by the laboratory data reviewer. The data reviewer provided a technical review for accuracy and precision according to the methods employed and laboratory protocols. The data package was also reviewed for completeness (i.e., all pertinent information was included, all appropriate forms were signed and dated, calculations were correct, and holding times and QC sample acceptance criteria had been met). A final review of the data was then performed by the Project Manager to ensure that the data package met the project specifications.

After the receipt of the data by LEA, the analytical data package was reviewed by the project manager, or designee, for completeness. The data package was then forwarded to the LEA Data Validation team for data verification and validation. Copies of all field documentation were also available to the LEA Data Validation team for review during the data verification and validation process.

In general, all data packages were first validated by the LEA Data Validation team to determine the completeness of the data package. Data validation was performed to insure that the data

received corresponded to the data requested. The first step in validating a data package, therefore, was to review the types and identifiers for the samples submitted for correspondence between the chain-of-custody and the other paperwork to the data reports. The next step in the data verification was to compare the data reports and the chain-of-custodies and/or analyses request forms. Problems or issues arising at this point were resolved by discussion between the LEA Data Validation team, the field personnel, the LEA project manager, and/or the analytical laboratory personnel, as appropriate. Once it was determined that the analytical data were valid for the project data quality objectives (DQOs), the analytical data were then verified.

2.4 Data Validation

Data validation is the process of qualifying analytical data to express the usability and suitability of the reported data. In general, the analytical data were reviewed using the guidelines established in *Region I, EPA Data Validation Functional Guidelines for Evaluating Environmental Analyses: Organic Data Review* (EPA, 1996) and *Region I, EPA Data Validation Functional Guidelines for Evaluating Environmental Analyses: Inorganic Data Review* (EPA, 1989). In practice, these guidelines were modified to reflect the use of non-Contract Laboratory Program (CLP) methods.

2.4.1 Data Package Review

The first step in data validation was to review the data package for completeness. This step was performed in order to identify discrepancies between the data package received from the laboratory and the data package requested, as well as to determine whether sufficient information was available to perform the data validation process.

Discrepancies between the received and the requested data packages were typically resolved through discussions between LEA Data Validation team and the off-site analytical laboratory project manager.

2.4.2 Quality Assurance/Quality Control Assessment

After the data package was reviewed for completeness and sufficiency, the quality assurance/quality control (QA/QC) aspects of the data package were reviewed. The QA/QC aspects of the data package are the laboratory's reports concerning those conditions of the sample delivery group (SDG) which may affect the quality of the data. These QA/QC data include:

- cooler temperature
- sample container conditions

- sample conditions
- sample preservation
- sample holding times.

Typical issues identified during this portion of the data review include the presence of headspace in the trip blanks associated with a specific SDG, or the receipt of sample coolers with internal temperatures outside the acceptable range of 2° to 6° C.

In addition to the QA/QC parameters directly affecting the quality of the samples, a preliminary review of the laboratory's internal QA/QC and analytical procedures was also conducted. The laboratory internal QA/QC identified include:

- instrumental calibration results
- laboratory blank analyses
- matrix spike (MS)/ matrix spike duplicate (MSD) analyses
- surrogate spike recoveries
- internal standard responses.

The purpose of this review was to determine the completeness of the QA/QC checks and to determine whether procedures employed in the shipping and handling of the samples and internal procedures used by the analytical laboratory could have adversely affected the quality of the analytical data reported for any given sample. The results of the examination of these were incorporated into the data validation documentation and, where appropriate, applied through the use of data qualifiers to the data results.

2.4.3 Data Examination

Data examination consisted of reviewing the data generated by the analysts, the calculations which transformed the raw data into the final reported concentration data, reviewing the results of the internal standards, MS/MSD samples, and surrogate recovery analyses, and reviewing the results of the internal laboratory QA/QC analyses.

2.4.3.1 Review of Laboratory Data Analysis

The data were reviewed by the LEA Data Validation team to determine whether the analyses were performed in a manner consistent with the requirements of the DQOs of the project. The data reports were examined to determine whether data were of a quality consistent with the laboratory's interpretation. The off-site analytical laboratories were required to report tentatively

identified compounds (TICs), however none were reported during the Airport/Klondike Area investigations.

2.4.3.2 Review of Laboratory Analytical Procedures

For organic analyses, the gas chromatograph/mass spectrometer (GC/MS) instrument performance check data were also analyzed. This procedure consisted of determining the response of the system to standard compounds, including an evaluation of the instrument's initial calibration results, the instrument's continuing calibration results, and an ion-abundance check. The initial and continuing calibration checks indicated whether the instrument's internal standards produced relative response signals consistent with the expected responses from known external calibration standards. An initial calibration check is supposed to have been performed whenever any corrective actions are taken upon the instrument which may affect the instrumental response, or when the continuing calibration check data indicate that instrumental response is outside quality control acceptance limits (QCAL). In addition to the initial and continuing calibration checks, the results of the ion-abundance check were also reviewed. The ion-abundance check was conducted to indicate whether the GC/MS was performing properly (or "tuned") by comparing the results of ion abundance from the analysis of the method-specific tuning compound established ion abundance criteria.

A review of the results of the internal standards was conducted to determine whether:

- correct standards were used for the analytical method
- area counts and retention times for the standards are within QCAL
- samples are re-extracted/re-analyzed if QC checks fail.

Laboratory blanks, equipment blanks, and trip blanks were analyzed to assure the analysts that cross-contamination between samples does not occur. The review of laboratory blanks included checks for a sufficient number and frequency of the correct types of laboratory blank analyses, and a determination of any contaminants associated with the blanks. The laboratory blanks which may be associated with any given SDG include:

- method blanks which are analyzed to determine whether contamination could have been introduced during handling and sample preparation;
- storage blanks which are analyzed to determine whether contamination could have been introduced during sample storage; and,
- instrument blanks which are analyzed to determine whether contamination could have been introduced by ineffective instrumental purging between samples.

Surrogate compounds were spiked into all samples and the respective recoveries were reviewed to determine whether matrix interference effects were present by spiking a sample with a compound not normally present in the samples within an SDG. A review of the surrogate compound recoveries was performed to determine whether the recoveries were within QCAL. In general, surrogate recoveries are compared to prescribed recovery limits to determine acceptance.

The MS/MSD samples are samples spiked with specific target analytes. The MS/MSD samples are produced from a sample from each environmental matrix in each SDG. These samples were analyzed to determine matrix effects and the accuracy and precision of the analytical process. In general, the MS/MSD sample analytical data are reviewed to determine if:

- Field samples, not blanks, were selected for use as MS/MSD bases
- Field samples selected had relatively low detected concentrations of the spiked compounds
- Spiked compound recoveries were within QCAL
- Relative percent difference (RPD, equal to the difference between two values divided by their average expressed as a percentage) between positively detected, non-spiked compounds in the unspiked samples, MS and MSD was less than or equal to 50 percent.

The data review also included a review of the field duplicate, trip, and equipment blank samples submitted with the SDG. Field duplicate samples were intended to be submitted at the rate of approximately one field duplicate per twenty samples analyzed. In addition to reviewing the rate of submission of field duplicate samples, a relative precision of the analytical method was evaluated based on the reported concentrations of the detected constituents in the duplicate sample pair. In general, an acceptable RPD for aqueous samples was less than or equal to 30 percent; the acceptable RPD for non-aqueous samples was less than or equal to 50 percent. Specific descriptions of the trip and equipment blank submissions are presented in TM 15, *Quality Assurance/Quality Control Methods*.

2.4.3.3 Review of Laboratory Reporting

The review of the laboratory reporting involved reviewing the transcription of data, the proper application of data qualifiers, and the preparation and presentation of an appropriate data package. The data package also was reviewed for completeness. The review of the data package included a review of the appropriate application of qualifiers by the analysts, including logging of estimated concentrations and rejecting unacceptable results.

2.4.4 Data Qualification

Based upon the review of the data package using the guidelines presented herein, the LEA Data Validation team applied additional data qualifiers to the data. The additional data qualifiers included changing unqualified, detected and non-detected concentrations to “estimated,” and rejecting non-detected results based upon the failure of the laboratory to achieve one or more of the specific QA/QC objectives for each particular analyses.

These additional data qualifiers were applied to the data electronically, within the Site analytical database without altering (or requesting the laboratory alter) the data package. The Site analytical database is described below in Section 2.6.

2.4.5 Performance Evaluation Samples

In addition to the environmental samples collected at the Site, performance evaluation (PE) samples were also submitted to the analytical laboratories in order to gauge the laboratories analytical accuracy and precision independent of the laboratories’ internal QA/QC. The PE samples were either custom made specifically for the Site investigation activities under VCAP or were stock samples available from the PE sample vendor. All PE samples used in the investigation were made by Environmental Resources Associates of Arvada, Colorado. The selection of analytical constituents for the PES was based upon the most commonly encountered contaminants in the Airport/Klondike Area.

All PE samples were supplied with certified analytical data, these data were not submitted to the laboratory. However, the laboratory was aware that these samples were not standard because of the packaging. The data from PE sample analyses was verified and validated in the same manner as data from other samples within the SDG. However, the data from PE samples was also compared to the certified analytical data supplied with the PE samples. The PE sample results were compared to determine whether all of the compounds present, and only those compounds certified to be present, were detected, and whether the reported concentrations were within the acceptable range as specified by Environmental Resource Associates.

Data from the PE samples was used to determine the accuracy, precision, and internal QA/QC of each individual laboratory. The data were used to qualify or validate other data within an SDG. In some cases the analytical laboratory analyzed the PE samples separately, or on different analytical instruments, from the remainder of the SDG.

Because of the differences in the level of QA/QC associated with analytical data generated during different phases of the Airport/Klondike Area investigation, PE samples were not submitted to analytical laboratories until June 1997.

2.4.6 Data Validation Reporting

Based upon their review of the laboratory data package, the LEA Data Validation team generated a documentation consisting of a Tier II Data Validation Report for review by the project manager. A Tier II Data Validation Report consisted of documentation describing the results of the QC checks, the results of PE sample evaluations, and a summary of the data qualifiers applied to the data set as a result of the data validation process.

2.5 Data Management

Geologic, hydrologic, physical, and chemical data were generated during the various Site investigations. Availability of this data was critical to the later investigation activities. The procedures, personnel, and software used for inventory, control, storage, verification, and presentation of data were described in the VCAP Work Plan.

Procedures discussed in the VCAP Work Plan included those used for communication within the project team, focusing on the exchange of information among the field sampling team, data management team, Technical Task Leaders, Project Manager, and laboratories. The systems used to collect, store, and analyze the project data were generally as detailed in the VCAP Work Plan.

2.6 Database Repository

Analytical data were received from the laboratory in hard copy and electronic formats. The electronic copies were incorporated into the Site database for further evaluation and review. The electronic project information system is a dBASE® application, which is used for electronically managing sample information and analytical data. The database management functions employed during the investigation activities at the Site were previously presented in the VCAP Work Plan.

The database allows the retrieval of analytical data in a variety of formats and from selected areas, media, or based on other, user-selected, criteria. In addition, the data may be retrieved based on preset standards or baseline criteria in order to assist in determining compliance with regulatory guidelines.

3. RESULTS

This TM covers the techniques and methodologies used for the verification and validation of the analytical data generated during the course of the Site investigation activities. However, this TM does not cover the results of specific chemical analyses of soil, groundwater or surface water samples collected during the investigation and remediation activities as these data are discussed in the appropriate TMs and USTMs. This TM also does not cover the specific results of the data validation or verification exercises including the specific qualifiers applied to the analytical data.

However, the results of the data validation and verification exercises are used in the data presented in the various TMs and USTMs.

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**TECHNICAL MEMORANDUM 13
SOIL VAPOR SURVEYING**

**SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
EPA ID No. CTD990672081**

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Drawing TM13-2	Soil Vapor Survey Locations, North and South Klondike Areas
Drawing TM13-3	Soil Vapor Survey Locations, South Airport Area

Acronyms

FID	Flame Ionization Detector
H&A	Haley & Aldrich, Inc.
LEA	Loureiro Engineering Associates, Inc.
mg/l	milligrams per liter
µg/l	micrograms per liter
P&W	Pratt & Whitney
PID	Photoionization Detector
PPE	Personal Protective Equipment
QA/QC	Quality Assurance/Quality Control
SOP	Standard Operating Procedure
TM	Technical Memoranda
USTM	Unit-Specific Technical Memorandum
VOC	Volatile Organic Compound

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memorandum (TM) presents the methodology and results of the soil vapor surveying conducted in the Airport/Klondike Area (Site) of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut. Soil vapor surveys were performed as part of the Site investigation activities to provide an indication of the presence and relative magnitude and the distribution of volatile organic contaminants in the unconsolidated materials in various locations at the Site.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. Previous investigations at the Site performed from 1989 through 1993 resulted in the installation and sampling of soil borings, groundwater monitoring wells, and temporary wellpoints throughout the Airport/Klondike Area.

1.3 Scope

This TM covers the installation, sampling, and rationale for the soil vapor survey locations installed in the Airport/Klondike Area. The methods and techniques discussed are those used by Loureiro Engineering Associates, Inc. (LEA) in 1997, by Haley & Aldrich, Inc. (H&A) in 1992, and by TARGET Environmental Services, Inc. (TARGET) in 1989. This TM does not cover specific uses of soil vapor analytical data generated from the soil vapor surveying as these data are discussed in the appropriate Unit-Specific Technical Memorandum (USTM).

1.4 General Geologic and Hydrogeologic Conditions

The geologic and hydrogeologic characteristics of the Site are discussed in detail in the main body of this report. In general, the surficial materials in which the majority of the soil vapor survey points were completed, consist of medium to fine grained sands with trace levels of fine gravels and coarse sands. These sediments are generally post-glacial, fluvial deposits associated with the Connecticut River, although in many places the upper portion of these sediments have been anthropogenically disturbed during on-site construction activities. Beneath the fluvial sediments are glaciolacustrine sediments, primarily laminated silts and clays, associated with

glacial Lake Hitchcock. The basal sediment layer over most of the area is glacial till and stratified drift. Bedrock in the general East Hartford area consists of Triassic Age, interbedded arkoses and basalts. Bedrock in the area has a general slight dip eastward cut by widespread steep faults.

The regional drainage basin is the Upper Connecticut River Basin. Regional flow in the unconsolidated materials in this part of the basin is to the west, towards the Connecticut River. Local groundwater flow is also controlled to some extent by local drainage sub-basins and topography. The upper portion of the unconsolidated sediments serves as the primary aquifer in the area. Groundwater flow in the bedrock is primarily within fractures and fault planes, and to a lesser extent within the rock matrix. The local bedrock aquifer would be adequate as a residential water supply source, but groundwater yields are typically too low to be of commercial or industrial use.

1.5 Soil Vapor Surveying Locations and Rationale

Three soil vapor surveys have been completed at the Site over the course of the environmental investigations associated with the Airport/Klondike Area. These soil vapor surveys were completed both as part of investigations of the soil quality in specific environmental units and areas to support subsequent soil boring/monitoring well installations programs. Soil vapor surveys were conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area in 1989; the Former Soil Pile Area of the South Airport Area in 1992; and the former Silver Lane Pickle Company Area of the North Airport Area in 1997. These soil vapor surveys were located based on historical information regarding Site operations, field observations made during numerous Site walkovers and visits, and information gathered during other phases of the environmental investigation of the Site. Historical operations have been compiled in various reports, deduced from aerial photographs, engineering drawings and plans, and reported in various P&W internal memoranda. More details on historical operations are included in the main body of this report as well as in the USTMs.

2. METHODOLOGY

This section presents the methods and techniques used to conduct soil vapor surveys at the Site. These methods were those used by LEA, H&A, and TARGET to conduct their respective investigations. The LEA soil vapor survey was conducted in the vicinity of the former Silver Lane Pickle Company in the North Airport Area. The locations of the soil vapor survey points are shown on Drawing TM13-1. The H&A soil vapor survey was conducted in the South Airport Area as a preliminary investigation for the RCRA closure of the Former Soil Pile Area. The TARGET soil vapor survey was conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area.

2.1 General Procedures

Soil vapor surveys in the Airport/Klondike Area have been completed in various locations to support subsequent soil boring/monitoring well installations programs. This TM describes the general procedures that were used during the completion of soil vapor surveys at the Site. Also discussed are any variations and exceptions to the general methodology and the reasons why these variations and exceptions were required.

The soil vapor surveying completed by LEA during the most recent investigation activities were in general accordance with the procedures described in LEA Standard Operating Procedures (SOP) *Standard Operating Procedure for Soil Vapor Surveying*. Soil vapor surveys conducted by other contractors have been conducted under their respective standard procedures and are referenced in the appropriate reports.

2.2 Soil Vapor Probe Installation Methods

Soil vapor surveys were initiated by locating the proposed soil vapor survey points by LEA field personnel. After the proposed soil vapor survey points were located, an auger hole was advanced through pavement or other restrictive layer, if appropriate. After the auger hole was completed, a pilot hole was drilled and/or punched to a depth of approximately 6-inches shallower than the proposed depth of the soil vapor point.

After the pilot hole was completed, the soil vapor probe was inserted into the pilot hole and driven into undisturbed sediments. The soil vapor probe consisted of a portion of stainless steel

tubing to which is fitted a sampling tip. The vapor sampling tip consisted of a short, approximately 2-inch long, stainless steel tubing punctured by small holes, fitted at the top and bottom with larger-diameter, stainless-steel blank sections each approximately 2 inches long. The top of the vapor probe was fitted with a vapor-tight Swagelok® connector to allow coupling of the vapor probe to the appropriate tubing. The larger-diameter, stainless-steel blank sections provided slightly over-sized sections to seal-off the hole around the perforated portion of the vapor probe.

After the vapor probe had been driven to depth, the pilot hole opening was sealed to prevent flow of ambient air into the vapor probe. The pilot hole was typically sealed using a modeling clay which provided an impermeable material, could be molded to fit the pilot hole opening and shaped snugly against the vapor probe. Once the soil vapor probe was installed in the hole and the hole sealed, the probe was attached to the sampling apparatus and sampling was commenced.

2.3 Vapor Sampling Methods

Soil vapor samples collected from vapor probes were collected in general accordance with the procedures described in the LEA SOP *Standard Operating Procedure for Soil Vapor Surveying*. Soil vapor sampling procedures were similar for all sampling locations.

Once the soil vapor probe was installed in the pilot hole, the probe was attached to the sampling apparatus by one of two methods. In the North Airport Area, having relatively low levels of contamination, the vapor probe was attached to Tygon® tubing. The Tygon® tubing was attached directly to the sampling system. The sampling system consisted of an air pump and a flow meter with the appropriate valves for controlling vapor flow through the system. After the system was connected, the probe was purged of a minimum of three volumes of vapor.

After purging, a sample of soil vapor was collected into a Tedlar® bag for subsequent laboratory analysis. After the Tedlar® bag was filled, the bag was transferred to a chilled cooler to await field analysis. Field analysis was performed using a portable flame ionization detector (FID); only field screening of the soil vapor samples was performed by LEA. The purpose of the field analysis was to provide a qualitative measure of the presence and location of contamination in the subsurface. The field data were subsequently used to guide a focused soil boring program, rather than to provide a quantitative measure of any subsurface contamination.

In the event that additional soil vapor samples were desired from the current location, the probe was manually advanced to the next target depth. If manually advancing the probe was not

possible due to the nature of the subsurface materials, the probe was extracted from the pilot hole and the pilot hole advanced in the manner described in Section 2.2.

2.4 Analytical Parameters

Analytical parameters for soil vapor samples collected by LEA from the North Airport Area were total ionizable volatile organic compounds (VOCs). Specific contaminants of concern were not chosen because the field data were subsequently used in a qualitative manner to guide a focused soil boring program, rather than to provide a quantitative measure of any subsurface contamination.

2.5 Quality Assurance/Quality Control Procedures

Because of the qualitative nature of the field analyses performed on the soil vapor samples collected by LEA, no quality assurance samples were collected. There was field calibrated FID in accordance with the vendor directions to provide a response of total ionizable VOCs relative to methane.

2.6 Pilot Hole Abandonment

After the completion of soil vapor sampling, the vapor probe was extracted from the pilot hole and the pilot hole was allowed to collapse. Where necessary, the pilot hole was backfilled with bentonite to the ground surface.

2.7 Historical Soil Vapor Surveys

Two of the three soil vapor surveys that have been completed at the Site over the course of the environmental investigations associated with the Airport/Klondike Area have been historical investigations associated with the Airport/Klondike Area. These historical soil vapor surveys were completed both as part of investigations of the soil quality in specific environmental units and areas to support subsequent soil boring/monitoring well installations programs.

2.7.1 TARGET Environmental Services Soil Vapor Survey

In 1989, TARGET conducted a soil vapor survey from December 11 to December 14, 1989, in the Airport/Klondike Area. The soil vapor survey was conducted at the request of Westinghouse Environmental and Geotechnical Services, Inc. as part of the Preliminary Reconnaissance Survey completed in 1990. The soil vapor survey was conducted in the following areas: the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North

Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area. The locations of the soil vapor survey points are shown on Drawing TM13-2. A summary of analytical data from this soil vapor survey is presented in Tables TM13-1a and TM13-1b.

The soil vapor surveying method used by TARGET was generally similar to the methods employed by LEA. At each soil vapor surveying location an auger hole was drilled through pavement, if present. A 0.5-inch pilot hole was driven to a depth of approximately 4 feet using a manually-driven slam hammer. According to the TARGET Environmental Services report (Target, 1989):

“The entire sampling system was purged with ambient air drawn through an organic vapor filter cartridge, and a stainless steel probe was inserted to the full depth of the hole and sealed off from the atmosphere. A sample of in-situ soil gas was then withdrawn through the probe and used to purge atmospheric air from the sampling system. A second sample of soil gas was withdrawn through the probe and encapsulated in a pre-evacuated glass vial at two atmospheres of pressure (15 psig). The self-sealing vial was detached from the sampling system, packaged, labeled, and stored for laboratory analysis.

“Prior to the day’s field activities all sampling equipment, slide hammer rods, and probes were decontaminated by washing with soapy distilled water and rinsing with distilled water. Internal surfaces were flushed dry using pre-purified nitrogen, and external surfaces were wiped clean using clean paper towels.

Field control samples were collected at the beginning and end of each day’s field activities and after every twentieth soil gas sample. These QA/QC samples were obtained by inserting the probe tip into a tube flushed by a 20 psi flow of pre-purified nitrogen and collecting in the same manner as described above.”

The soil vapor samples collected by TARGET were analyzed according to two analytical methods. The first analytical method was EPA Method 601 on a gas chromatograph equipped with an electron capture detector, but using direct injection instead of purge and trap. A summary of analytical data from this soil vapor survey for this method is presented in Table TM13-1a. The analytical parameters, and their associated detection limits were:

1,1-Dichloroethylene	1.0 µg/l
Methylene chloride	1.0 µg/l

trans-1,2-Dichloroethylene	1.0 µg/l
1,1-Dichloroethane	1.0 µg/l
Chloroform	0.1 µg/l
1,1,1-Trichloroethane	0.1 µg/l
Carbon tetrachloride	0.05 µg/l
Trichloroethylene	0.1 µg/l
1,1,2-Trichloroethane	0.1 µg/l
Tetrachloroethylene	0.05 µg/l
1,1,2,2-Tetrachloroethane	0.05 µg/l

The second analytical method was EPA Method 602 on a gas chromatograph equipped with a flame ionization detector, but using direct injection instead of purge and trap. A summary of analytical data from this soil vapor survey for this method is presented in Table TM13-1b. The analytical parameters, and their associated detection limits were:

Methyl- <i>t</i> -butyl ether	1.0 µg/l
Benzene	1.0 µg/l
Toluene	1.0 µg/l
Ethylbenzene	1.0 µg/l
m- and p-Xylene	1.0 µg/l
o-Xylene	1.0 µg/l

In addition to the above sets of analyses, a summary measure of the relative degree of contamination in a particular soil vapor sample was calculated. An FID Total Volatiles value was derived from summation of the chromatogram areas from all EPA Method 602 series compounds based on the instrument response factor for toluene. The summary measure provides a relative measure of the total concentration of hydrocarbon contaminants present in a given soil vapor sample.

2.7.2 Haley & Aldrich, Inc. Soil Vapor Survey

On August 18, 1992, H&A conducted a soil vapor survey in the South Airport Area as a preliminary investigation for the RCRA closure of the Former Soil Pile Area. The soil vapor survey was performed to provide preliminary information regarding the possibility of performing a clean closure on the area. A total of eleven soil vapor locations, SA-SV-01 through SA-SV-11, were sampled for VOCs during this investigation. The locations of the soil vapor survey points are shown on Drawing TM13-3. A summary of analytical data from this soil vapor survey is presented in Table TM13-2.

The soil vapor survey and sample analyses were conducted in the following manner (H&A, 1992):

“Soil vapor samples were collected at designated stations, from one or more depths between 2.5 and 8.0 ft. Specific VOCs were sought, which included 1,1-dichloroethylene, 1,2-dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene, benzene, toluene, ethyl benzene, and xylenes. Instrument calibration was performed using mixed standards containing the specific analytes.

At each soil vapor sampling station, a sampling tube composed of 2.5 ft. long steel-pipe sections, joined by threaded connectors was driven to the desired depth using the percussion mode of the drill. Vapors were drawn from the adjacent soil voids into the tube, through slots in the bottom pipe-section, using a vacuum pump. After approximately two minutes of pumping, a sample of the soil vapor was collected with a syringe, at a sampling port on the tube. The sample was then injected into the GC for analysis.

The drill bit and sampling tube were washed between [sic] sampling stations by laboratory-soap scrub, a tap water rinse, a methanol rinse and a final tap water rinse. The syringe was purged with hydrocarbon-free air to remove prior-sample residue. Sampling tube and syringe blanks were analyzed between [sic] samples to verify that sampling equipment was not contaminated.

A Photovac Model 10S gas chromatograph was used for the analyses, under the following instrument conditions:

Detector	- 10.6 eV Photoionization Detector
Oven Temperature	- 40° C, isothermal
Carrier Gas and Flow Rate	- Hydrocarbon-free air, 7.5 ml/min
Column	- Cpsil 5CB, capillary

The GC was calibrated at the beginning of the field day by injecting a headspace sample from atop aqueous standards containing known concentrations of the VOCs in solution. The instrument determines peak retention times (times elapsed between sample injection and peak appearances). Peak areas are integrated by the GC microprocessor. A response factor (the ratio of analyte concentration in the standard to chromatogram peak area), is calculated by the operator for each

analyte. Standards were re-analyzed several times during the day to verify response factors and to recalibrate with respect to retention times.

A peak on a sample chromatogram is judged to correspond to a peak on a calibration chromatogram if respective retention times were within one second of each other. Similarities in calibration peak and sample peak shapes were also considered in identifying compounds. Concentrations of the VOCs sought are calculated by multiplying the peak areas on sample chromatograms by the corresponding response factors.”

2.8 Decontamination of Materials and Equipment

The purpose of consistent decontamination procedures was to prevent the potential spread of contamination between soil vapor survey locations and samples. All equipment and materials placed into a soil vapor survey pilot hole, or associated with the collection and sampling of soil vapor, were decontaminated prior to initiating the sampling and between individual samples, as appropriate. Where possible dedicated soil vapor probes were used during a given soil vapor surveying event to minimize the need for field decontamination of equipment. The decontamination procedures used by LEA personnel are presented in the LEA SOP *Standard Operating Procedure for Soil Vapor Surveying*.

When the use of dedicated soil vapor probes was not possible, sampling equipment, such as soil vapor probes, were decontaminated between uses in the field at the soil vapor surveying site. Manual decontamination took place at the sampling site using a portable decontamination system, consisting of a small, portable trough to contain over-spray and potentially spilt decontamination fluids, and decontamination solutions in individual 5-gallon buckets, or spray containers, as appropriate. The sampling equipment was decontaminated using the following procedure:

- Brush off gross soil particles.
- Wash and scrub equipment with phosphate-free detergent.
- Rinse equipment with deionized water.
- Rinse equipment with dilute nitric acid solution.
- Rinse equipment in deionized water.
- Rinse equipment with dilute methanol/water solution.
- Rinse equipment in deionized water.
- Allow equipment to air dry.

The decontamination fluids were maintained in 5-gallon buckets during use, and transferred to 55-gallon drums for disposal by P&W. The decontamination of soil vapor sampling equipment used by other contractors is discussed in Section 2.7.

2.9 Soil Vapor Survey Point Location Identifiers

Soil vapor sampling locations, as well as monitoring wells, piezometers, test pits, stream gauges, surface water and sediment sampling locations, and soil borings, have been provided with location identifiers using a systematic method to prevent duplication of location identifiers. However, historic soil vapor sampling locations have not always been identified using this identifier method. The system of location identifiers provides a relatively easy means of finding the referenced locations on Site maps. All parts of the P&W East Hartford facilities, including the Andrew Willgoos Gas Turbine Laboratory, the Colt Street facility, and the Main Street facility, have been divided into twenty-nine study areas. Each of the study areas has been assigned two-letter identifiers based upon the common name for the area. These two-letter designations are presented in Table TM13-3.

In addition, each type of sampling location has been assigned a two-letter designation to identify the major sample type for a given sampling location. The two-letter designations for the various types of sampling locations are also presented in Table TM13-3. Because of the large areas involved, the study areas that encompass the Airport/Klondike Area include the North and South Airport Areas and the North and South Klondike Areas. All monitoring and sampling locations have been given a location identifier based on their location in the Airport/Klondike Area, the type of sampling or monitoring location, and finally a sequential numeric identifier based upon the specific type of location. All soil vapor sampling locations are presented on Drawings TM13-1 through TM13-3.

2.10 Waste Management

All spent decontamination fluids generated during soil vapor sampling activities, were placed in 55-gallon, closed-top drums supplied by P&W for subsequent off-site disposal by P&W. The drums were labeled, the sampling locations contributing to each were listed, and the information tracked to aid in waste characterization and disposal. In general, the drilling of the pilot holes for soil vapor sampling did not generate waste soil requiring disposal.

2.11 Health and Safety

LEA field personnel conducted field activities in accordance with the LEA Site Health and

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Safety Plan that was prepared for all of the investigation activities performed at the Site. In general, soil vapor sampling was conducted in modified Level D personal protective equipment (PPE) consisting of safety glasses, surgical or nitrile gloves, steel-toed shoes, and hard hats. Other contractors employed as subcontractors operated in accordance with their specific health and safety plans.

3. RESULTS

The soil vapor survey performed by LEA in the former Silver Lane Pickle Company Area of the North Airport Area was conducted on a qualitative basis. The survey was conducted to determine the potential presence of contaminants in the subsurface resulting from the former underground storage tanks reported to have been used by the Pickle Company and to direct additional focused soil boring investigations in the area. The results of this soil vapor survey are presented on Drawing TM13-1. The results of LEA's soil vapor survey indicated the presence of VOCs to the north and the east of the former gas pumps associated with the former Silver Lane Pickle Company.

The soil vapor survey conducted in 1992 in the Former Soil Pile Area of the South Airport Area was conducted to determine the presence of VOCs and guide closure activities on these units. The results indicated the presence of relatively low concentrations of VOCs in soil vapor at locations across the northern and central portions of the area.

The soil vapor survey conducted as part of the Preliminary Reconnaissance Survey in 1989 was performed in the Virgin Product Storage Area (VPSA) and Fire Training Area A of the South Klondike Area, the North Klondike Area (the general Suntan Area), and Fire Training Area B and the Contractor Storage Area of the South Airport Area. A variety of VOCs were detected in the soil vapor samples collected from these areas. Data from this investigation were subsequently used to direct soil boring and monitoring well installations during the Preliminary Reconnaissance Survey. A variety of VOCs were reported in the soil vapor samples collected in these areas. The highest concentrations were detected in the VPSA Area, and sporadic, relatively low concentrations of VOCs were detected in the remaining areas surveyed.

The soil vapor data collected during 1989 was quantitatively and qualitatively analyzed. All of the soil vapor probes installed by TARGET during the 1989 investigations were advanced to 4 feet. However, because of the shallow depth to groundwater in the South Klondike Area (in places less than four feet) and the degree of contamination present in the groundwater, the value of the soil vapor data in delineating soil contamination was considered to be limited. As such, although the data provided a qualitative indication of the presence of contamination, the data were never considered quantitatively accurate and were not used.

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REFERENCES

Haley & Aldrich, Inc., October 1992, *RCRA Closure Plan for Former Storage Area at the South Airport Area*.

TARGET Environmental Services, Inc., 1989, *Soil Gas Survey, United Technologies Corporation, Klondike Area, East Hartford, Connecticut*.

Westinghouse Environmental and Geotechnical Services, Inc. 1990, *Preliminary Reconnaissance Survey of the Klondike Area*, Pratt & Whitney, East Hartford, Connecticut, unpublished report for Pratt & Whitney.

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TABLES

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
C1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.25	<0.05	2.4	<0.10	12	<0.05
C2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.11	<0.05
C3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	1.2	<0.05	0.47	<0.10	0.38	<0.05
C4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	0.16	<0.05
C5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.31	<0.05
C6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.17	<0.05
FA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.55	<0.05
FA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	0.40	<0.05
FA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.36	<0.05
FA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.27	<0.05
FA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.44	<0.05
FA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.19	<0.05	<1.0	<0.10	0.38	<0.05
FA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.23	<0.05
FA9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.32	<0.05
FB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.58	<0.05	<1.0	<0.10	0.86	<0.05
FB5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
FB6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB10	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
FB11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
L1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.13	<0.05
L2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.30	<0.05
L3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.19	<0.05	<1.0	<0.10	0.16	<0.05
L4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.22	<0.05
L5	µg/l	2.2	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	0.27	<0.05
L6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	0.14	<0.05
Q1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.26	<0.05
SA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.33	<0.05	<1.0	<0.10	0.51	<0.05
SA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.07	<0.05
SA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.12	<0.05	<1.0	<0.10	<0.05	<0.05
SA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
SA7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SC6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
SC7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	0.22	<0.05	<0.05
SC8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SE3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	4.0	<0.05
SE4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SE6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.18	<0.05	<1.0	<0.10	<0.05	<0.05
SE7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SF1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SF2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	20	<0.05
SF3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	0.18	<0.10	0.52	<0.05
SF4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.26	<0.05
SF5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	<0.05	<0.05
SG2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.16	<0.05	<1.0	<0.10	<0.05	<0.05
SG4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SG6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SG7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SH1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
SH2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	<0.05	<0.05
SH3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.18	<0.05	<1.0	<0.10	<0.05	<0.05
SH4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SH5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SJ1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SJ2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
SJ3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	1.4	<0.05
SJ4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	<0.05	<0.05
SK2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SK6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	<0.05	<0.05
SL1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SL3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.14	<0.05	<1.0	<0.10	<0.05	<0.05
SL7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
SL9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	<0.05	<0.05
T3141	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.37	<0.05
T3142	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.13	<0.05	<1.0	<0.10	0.29	<0.05
T3143	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.20	<0.05
T3144	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	0.11	<0.05
TD1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.17	<0.05	<1.0	<0.10	1.3	<0.05
TD2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	1.4	<0.05
TD3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	3.0	<0.05
VP1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP6	µg/l	<1.0	<1.0	<1.0	<1.0	4.5	<0.10	0.44	<0.05	<1.0	<0.10	<0.05	<0.05
VP7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.15	<0.05	<1.0	<0.10	<0.05	<0.05
VP8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	<0.05	<0.05
VP10	µg/l	<1.0	<1.0	<1.0	<1.0	10	<0.10	46	<0.05	0.20	<0.10	1.4	<0.05
VP11	µg/l	24	<1.0	<1.0	<1.0	<1.0	<0.10	0.31	<0.05	0.44	<0.10	57	<0.05
VP12	µg/l	14	<1.0	<1.0	<1.0	33	<0.10	>205	<0.05	>370	1.5	>349	<0.05
VP13	µg/l	289	<1.0	<1.0	<1.0	<1.0	<0.10	0.22	<0.05	0.14	<0.10	20	<0.05
VP14	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	0.38	0.74	<0.05	0.20	<0.10	29	<0.05

Table TM13-1a
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	11DCE/ Freon 113	MC	TDCE	12DCA	11DCA	CFM	111TCA	CTC	TCE	112TCA	PCE	1122TTCA
VP15	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10	<0.05	<1.0	<0.10	4.2	<0.05
VP16	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	8.9	<0.05
VP17	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	3.4	<0.05
VP18	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	0.11	<0.05	<1.0	<0.10	2.6	<0.05
VP19	µg/l	428	<1.0	<1.0	<1.0	18	0.32	>214	<0.05	152	<0.10	>312	<0.05
VP20	µg/l	5.0	<1.0	<1.0	<1.0	<1.0	<0.10	3.7	<0.05	1.5	<0.10	139	<0.05
VP21	µg/l	15	<1.0	<1.0	<1.0	37	<0.10	124	<0.05	28	<0.10	180	<0.05

Abbreviations:

11DCE: 1,1-Dichloroethylene
MC: Methylene Chloride
TDCE: trans-1,2-Dichloroethylene
12DCA: 1,2-Dichloroethane
11DCA: 1,1-Dichloroethane
CFM: Chloroform

111TCA: 1,1,1-Trichloroethane
CTC: Carbon tetrachloride
TCE: Trichloroethylene
112TCA: 1,1,2-Trichloroethane
PCE: Tetrachloroethylene
1122TTCA: 1,1,2,2-Tetrachloroethane

Table TM13-1b
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles*
C1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8
C2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.1
FA3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15
FA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FA9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB10	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FB11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
L5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	33
L6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table TM13-1b
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
Q1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA1	µg/l	<1.0	<1.0	8.3	2.2	<1.0	1.9	264
SA2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	32
SA3	µg/l	<1.0	<1.0	<1.0	3.2	1.9	2.8	157
SA4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SA8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SC8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10
SE2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11
SE3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SE7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.1
SF3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SF4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	35
SF5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	44

<p align="center">Table TM13-1b TARGET Environmental Services, Inc. Soil Vapor Survey Summary Results</p>								
Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
SG1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SG7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SH4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	25
SH5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SJ4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SK6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
SL9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table TM13-1b
TARGET Environmental Services, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Units	Pentane/ MTBE	Benzene	Toluene	Ethyl benzene	m- & p- Xylene	o-Xylene	Total Volatiles ^a
T3141	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3142	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3143	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
T3144	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TD3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP1	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP2	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP3	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP4	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP5	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP6	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	24
VP7	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP8	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP9	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP10	µg/l	<1.0	<1.0	132	4.4	27	20	1,092
VP11	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.5
VP12	µg/l	<1.0	1.5	5.9	11	7.2	5.2	3,111
VP13	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.7
VP14	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	58
VP15	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP16	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP17	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP18	µg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VP19	µg/l	<1.0	1.7	8.7	47	54	29	5,029
VP20	µg/l	<1.0	<1.0	<1.0	1.7	2.7	1.6	149
VP21	µg/l	<1.0	<1.0	2.7	9.5	10	6.8	1,278

^a Total Volatiles calculated using the sum of the areas of all integrated chromatogram peaks and the instrument response factor for toluene.

Table TM13-2
Haley & Aldrich, Inc.
Soil Vapor Survey Summary Results

Sampling Point	Depth (Ft.)	11DCE	12DCE ^a	TCA	TCE	PCE	Benzene	Toluene	Ethyl benzene	Xylenes
SA-SV-01	2.5 - 3.0	ND<1	4	ND<3	ND<1	9	ND<1	1	ND<1	ND<1
SA-SV-02	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	11	ND<1	ND<1	ND<1	ND<1
SA-SV-03	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	2	ND<1	ND<1	ND<1	ND<1
SA-SV-04	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-05	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	2	ND<1	ND<1	ND<1	ND<1
SA-SV-06	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-07	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-08	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	1	ND<1	ND<1	ND<1	ND<1
SA-SV-09	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-10	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
SA-SV-11	2.5 - 3.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
	7.5 - 8.0	ND<1	ND<1	ND<3	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1

Notes:

^a The concentrations reported for 1,2-Dichloroethylene represent a sum of cis-1,2-Dichloroethylene and trans-1,2-Dichloroethylene

The concentrations reported are in terms of concentrations of VOC in an aqueous standard that would generate the observed level of VOC vapor in headspace above the standard.

Abbreviations:

11DCE: 1,1-Dichloroethylene
MC: Methylene Chloride
TDCE: trans-1,2-Dichloroethylene
12DCA: 1,2-Dichloroethane
11DCA: 1,1-Dichloroethane
CFM: Chloroform

111TCA: 1,1,1-Trichloroethane
CTC: Carbon tetrachloride
TCE: Trichloroethylene
112TCA: 1,1,2-Trichloroethane
PCE: Tetrachloroethylene
1122TTCA: 1,1,2,2-Tetrachloroethane

Table TM13-3
Area and Sampling Type Identifiers
Pratt & Whitney, East Hartford, Connecticut

Area Designation	Area	Sampling Type Identifier	Explanation
AB	Within A Building	MW	Monitoring Well
BB	Within B Building	PZ	Piezometer
CB	Within C Building	SW	Surface Water
DB	Within D Building	SD	Sediment
EB	Within E Building	CC	Concrete Chip
FB	Within F Building	SS	Surface Soil
GB	Within G Building	SB	Soil Boring
HB	Within H Building	TP	Test Pit
JB	Within J Building	SV	Soil Vapor
KB	Within K Building		
LB	Within L Building		
MB	Within M Building		
CS	Colt Street Facility		
EA	Engineering Area		
ET	Experimental Test Airport Laboratory		
LM	Area Outside Buildings L and M		
NA	North Airport Area		
NT	North Test Area		
NW	North Willgoos Area		
PH	Powerhouse Area		
SA	South Airport Area		
SK	South Klondike Area		
ST	South Test Area		
SW	South Willgoos Area		
WT	Waste Treatment Area		
XT	Experimental Test Area		

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